APRIL, 1932

# COTTON

*Serving the*

## TEXTILE INDUSTRIES

LIBRARY OF CONGRESS
APR 15
PERIODICAL DIVISION

Mesh,
Fancy Stitch,
or Plain —

STANDARD-COOSA-THATCHER Durene will do a better job for you, —because uniformity of quality is a fundamental of Standard-Coosa-Thatcher Durene . . .

- Evenness of Thread
- Accuracy of Count
- in well-wound packages

*Samples on Request*

STANDARD-COOSA-THATCHER COMPANY

CHATTANOOGA, TENN.

Executive and Sales Offices: Lafayette Building, Philadelphia, Pa.

*Branch Offices:*— 456 Fourth Ave. New York; Johnston Bldg. Charlotte, N. C.; 222 West Adams St. Chicago, Ill.

*Canadian Representatives:* Wm. B. Stewart & Sons, Ltd., Toronto-Montreal

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# WHAT THE NEW C&K COTTON KING LOOM MEANS TO THE MANAGEMENT

**The advantage of Cotton King Looms to the management can best be described by the following typical example.**

| | *Old Looms* | *Cotton Kings* |
|---|---|---|
| Looms per weaver | 4 | 12 |
| Looms per fixer | 44 | 48 |
| Speed | 140 | 143 |
| Per cent production | 66 | 78 |
| Yards per loom per 48 hour week | 274 | 331 |
| Yards per weaver's set per 48 hour week | 1096 | 3972 |

| | |
|---|---|
| *Comparison* | 20.8% more cloth per loom |
| *Cotton Kings* | 262.0% more cloth per weaver's set |
| *vs. Old Looms* | 40.8% saving in weaving cost including all labor and overhead charges |
| | 42.8% return on investment |

These figures were computed from data secured in a mill in which Cotton King Looms and "old looms" were weaving identical fabrics under the same operating conditions.

In this day of competitive manufacturing and selling, would not such savings mean something to YOU?

THE NEW C & K PRECISION FAMILY

| *High Speed Worsted* | *Super Silk* |
|---|---|
| 4 x 1 Automatic; 4 x 4 Non-automatic | Cone, dobby or intermediate head |
| *Cotton King*—Cam or dobby | Non-automatic with feeler motion |
| 2 x 1 and 4 x 1 bobbin changing | 2 x 1 or 4 x 1 bobbin changing |
| 2 x 1 shuttle changing | 2 x 1 shuttle changing |

PRECISION PRINCIPLES OF CONSTRUCTION ALIKE IN ALL

## CROMPTON & KNOWLES LOOM WORKS

LOOMS FOR COTTONS, SILKS, RAYONS, WOOLENS, CARPETS AND RUGS, BLANKETS, JACQUARD FABRICS, ASBESTOS, LINENS

Allentown Paterson Philadelphia WORCESTER - PROVIDENCE S. B. Alexander, So. Mgr., Charlotte

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Equip Your Mill
With High Speed
X Model Looms
More Product
On the Same Number
Of Looms
Or the Same Product
On Less Looms

**DRAPER CORPORATION**

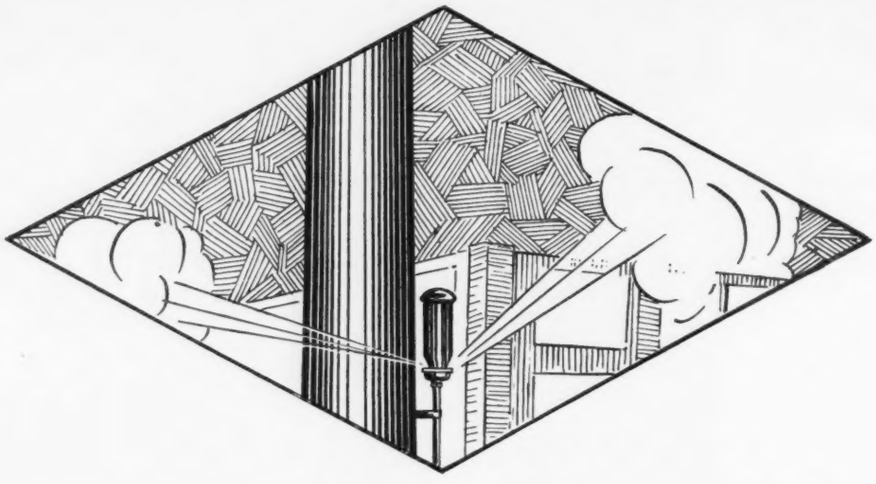
**Hopedale Massachusetts**

**Southern Offices Atlanta Ga and Spartanburg S C**

Copyright 1917 by Draper Corporation

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

CARD CLOTHING



# DELIVERED ON TIME!

The whistle blows for the day's work to begin . . . the hustle and bustle of men getting on the job . . . "You mean the new card clothing is here already?" the carder asks of the foreman. "You only put in the order yesterday." "I know," replies the foreman, "but the 'supe' sent a wire to Howard Brothers—I'll say those birds know how to rush 'em up. Come on, get busy!"

. . . and so in scores of instances Howard Brothers have come out with flying colors in quick delivery co-operation. They make it a point to keep large stocks for immediate shipment. Their branch plants and warehouses are strategically located in textile centers.

You can get the quickest possible service, whether your requirements are Tuffer Card Clothing, Cylinder, Doffer, Stripper, Burnisher or Emery Fillets; Napper Clothing; Wire Heddles; Hand Stripping Cards; Strickles.

Also speedy repairing of Top Flats and Lickerins. Extra sets of flats can be loaned to mills.

The Howard Brothers quality is known throughout the textile industry. Specify Howard on your next order.

TUFFER CARD CLOTHING IS GUARANTEED AGAINST SHELLING OUT

## HOWARD BROS. MFG. CO.

HOME OFFICE and FACTORY: WORCESTER, MASS.

*Southern Plant*
244 FORSYTH ST., ATLANTA, GA.

*Branch Offices*
PHILADELPHIA, DALLAS and WASHINGTON, D. C.

# A FRANK STATEMENT OF CONDITIONS AND COSTS IN THE TEXTILE FINISHING INDUSTRY AS WE SEE THEM

PRICES today in the Textile Industry are too low for concerns either large or small to make a decent profit, yet we are engaged in possibly the most fundamental industry of the country, because people must be clothed and fashions must have their swing.

We know that many concerns in the industry have postponed placing orders for new machines, feeling that prices might go lower. Frankly, we do not see how this can be done.

Therefore, to concerns who have allowed their machines to go on without needed repairs and replacements, we suggest:

That you look over your tenter equipment;
Have chains overhauled and put in good condition;
Your heating system, in view of improvements which we have made recently, may be comparatively low in efficiency.
Mangle and calender rolls may require new filling, a new kind of stock, or turning down on the body or heads.
Your drying cylinders may need overhauling.

***These are just a few suggestions on repairs and replacements***

THEN there are new machines to be installed, Sanforizing machines, for instance. Plants that install these will certainly have a lead on their competitors.

Why don't you have this work done at once? Take advantage of low prices and be ready to meet the demand which must come, for, as a noted economist once said—"Depressions are over when men get down to one pair of pants."

*Be sure to see the Butterworth "Ultra" Package Dyeing Machine at the Knitting Arts Exhibition in Philadelphia April 11-15. Spaces 283-284. Literature will be available.*

## H. W. BUTTERWORTH & SONS COMPANY

Established 1820

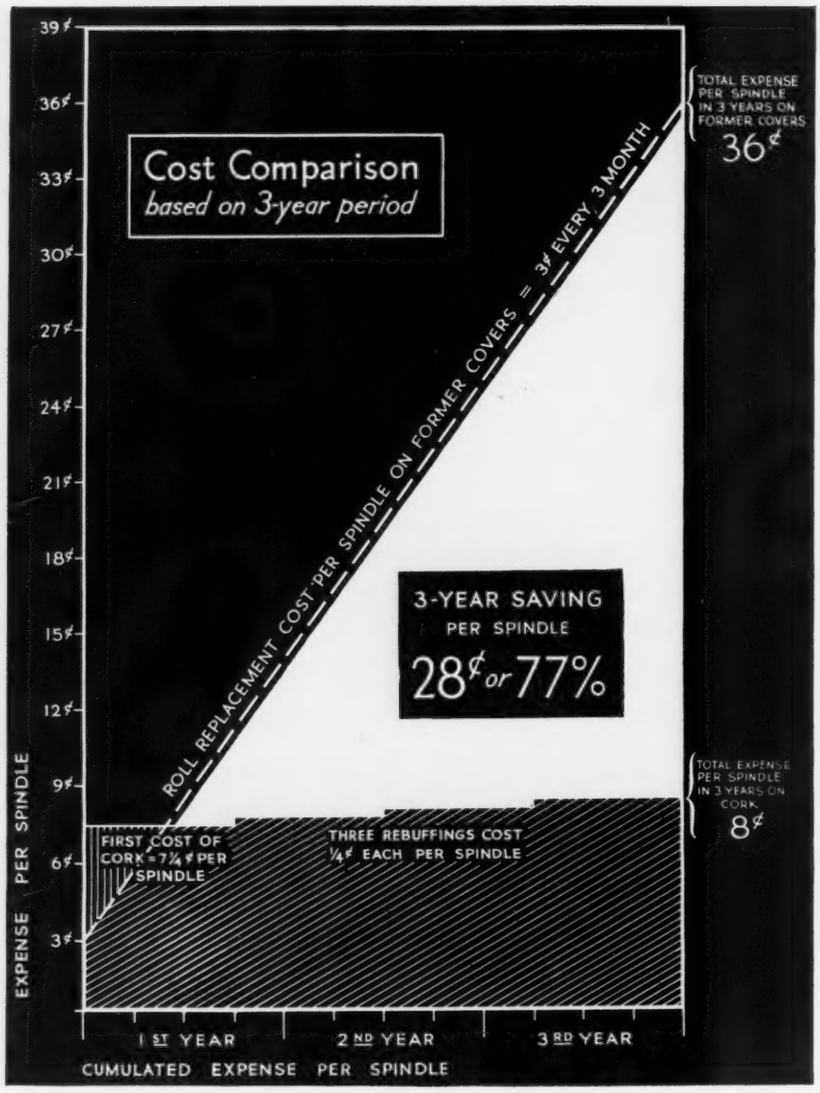
Philadelphia, Pa.
*New England Office:*
TURKS HEAD BUILDING
Providence, R. I.

*Southern Office:*
JOHNSTON BUILDING
Charlotte, N. C.

Plants at Philadelphia and Bethayres, Pa.
*In Canada:*
W. J. WESTAWAY CO.
Hamilton, Ontario

## BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING MACHINERY FOR THE TEXTILE INDUSTRY




# $5,560 ANNUAL SAVING ON CORK

***is indicated by test made in 60,000 spindle mill***

HERE are *facts*—and plenty of them—for the mill that must cut its production costs in 1932!

This South Carolina mill made its own three-year test on night and day run. Kept its own cost figures in direct comparison with other roll coverings. Armstrong's Seamless Cork Cots saved them 28 cents per spindle in 3 years—indicating that they would save $5,560 annually on their 60,000 spindles. As a result the mill is now fully equipped with cork rolls.

Lasting four times as long as ordinary roll coverings, Armstrong's Seamless Cork Cots have been adopted in over 100 mills spinning 2s to 120s. The total spindlage on cork is well over 5,000,000—proof enough of the great savings made in roll replacement cost.

Can you afford to overlook the definite advantages these other mills have discovered? Get the whole story. Send for new, free book "The Facts about Armstrong's Seamless Cork Cots," giving specific performance figures. Write today. Address Armstrong Cork Company, 923 Arch Street, Lancaster, Pa.

*Armstrong's* (A) *Product*

# *Armstrong's Seamless Cork Cots*

*For Spinning and Card Room Rolls*

# "If I owned a Cotton Mill.."

"I'd forget that once business was fine and put in my time figuring how to make my 1932 volume show a profit. I'd try to get closer to people's actual wants and fill them—so far as my equipment would let me. I'd write my raw materials down to a 1932 basis and build my machinery up to a 1932 basis.

"Maybe—probably—I wouldn't have the money to do it all at once, but I'd at least make my plans. I'd make a special search for less expensive methods of manufacturing, like Long Draft Spinning, for example.

"Well, I don't own a mill. I'm selling textile machinery, and believe it or not, I'm selling a lot of Casablancas Long Draft Spinning. Which would seem to prove that quite a few owners of cotton mills are doing just what I'd do if I were in their places.

"If you would like to know more about Long Draft, there's one book you ought to study—'The ABC of Long Draft Spinning.' You want a copy? I gave away my last one yesterday but write to my company at Whitinsville—they will send you one."


WHITIN
MACHINE WORKS
ESTABLISHED 1831

*Fales & Jenks Division*
*Woonsocket Machine and Press Division*

Whitinsville, Massachusetts, U. S. A.

Charlotte, N. C. Atlanta, Ga.

The ABC of LONG DRAFT SPINNING

WHITIN MACHINE WORKS
Whitinsville, Mass.

Send me a copy of "The ABC of Long Draft Spinning."

Name .....

Mill .....

City ..... State .....

# EFFICIENCY

## Means Getting The Most Done With The Least Effort

Moving picker laps by hand from a breaker to an intermediate, and from the intermediate to the finisher is a fine example of *inefficiency*. Cut out the intermediate and it helps some, but is still wasteful of effort, and effort costs money.

Spending thousands of dollars for efficient opening machinery, and then winding the cotton up into as tight a lap as possible, is a wasteful and harmful practice. It wastes power, and damages the cotton.

Combining all pickers into a continuous machine, which takes loose cotton in one end and turns finished laps out of the other is the efficient way.

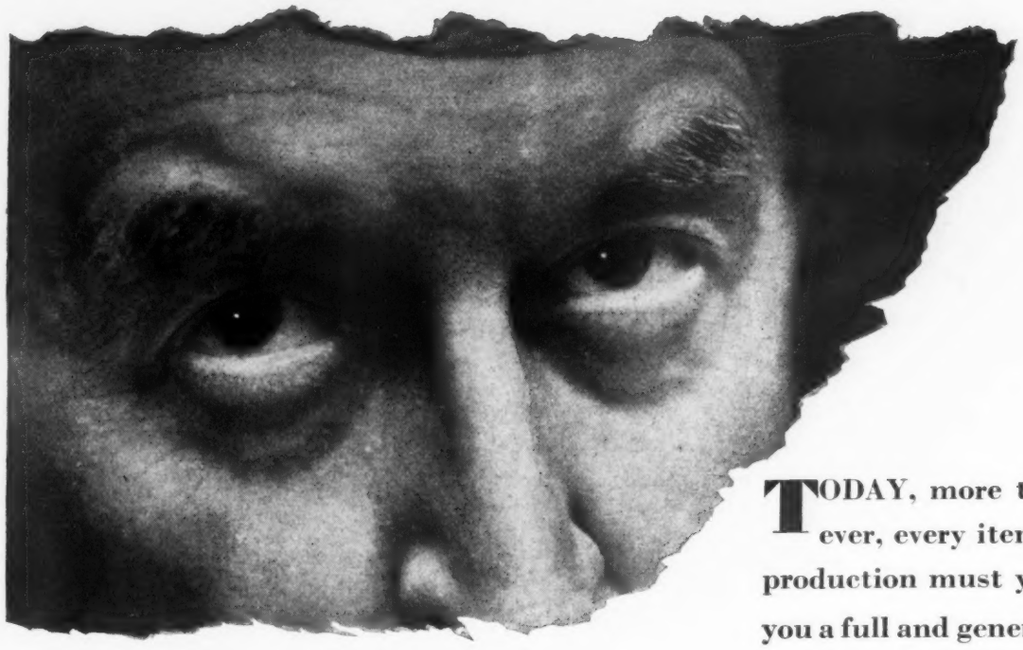
Reducing costs often means simply lowering quality, which is generally foolish; but if costs can be reduced by changing machines to make them do their work in a different and better way, it is more foolish not to do it.

Pickers combined by the Aldrich Synchronized Single Process method do better work, and do it cheaper; enough cheaper to pay for the change in from six to eighteen months. This is not merely a statement, but a fact which can easily be verified by asking those who have made the change. Over 200 installations are paying nearly 100% on the investment, with savings ranging from 50% to 200%.

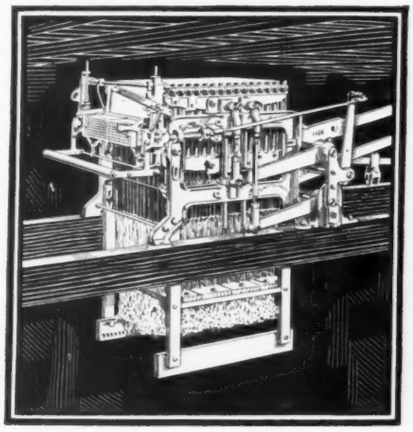
**AldricH MachinE**

**Greenwood, WorkS South Carolina**

# Is *Your* Equipment Tearing at Profit?



TODAY, more than ever, every item in production must yield you a full and generous profit . . . to offset the insistent demand for price! What about your equipment? Is it tearing at your profit . . . or is it producing goods at a cost low enough to meet present day prices without sacrificing too much of your profit? ♥ You alone can answer. You alone know whether or not you are matching obsolete equipment against the efficiencies of modern plant operation. ♥ Obsolescence can't pay. Improved Halton's Jacquards will most certainly reduce your weaving costs per installation. In more dependable performance, in lowered maintenance costs, in greater versatility to patterns of the moment. That's why Moss Rose, Hardwick and Magee and Cheney Silks are using them. Investigate the profit saving improvements as given in our catalogue. Write.



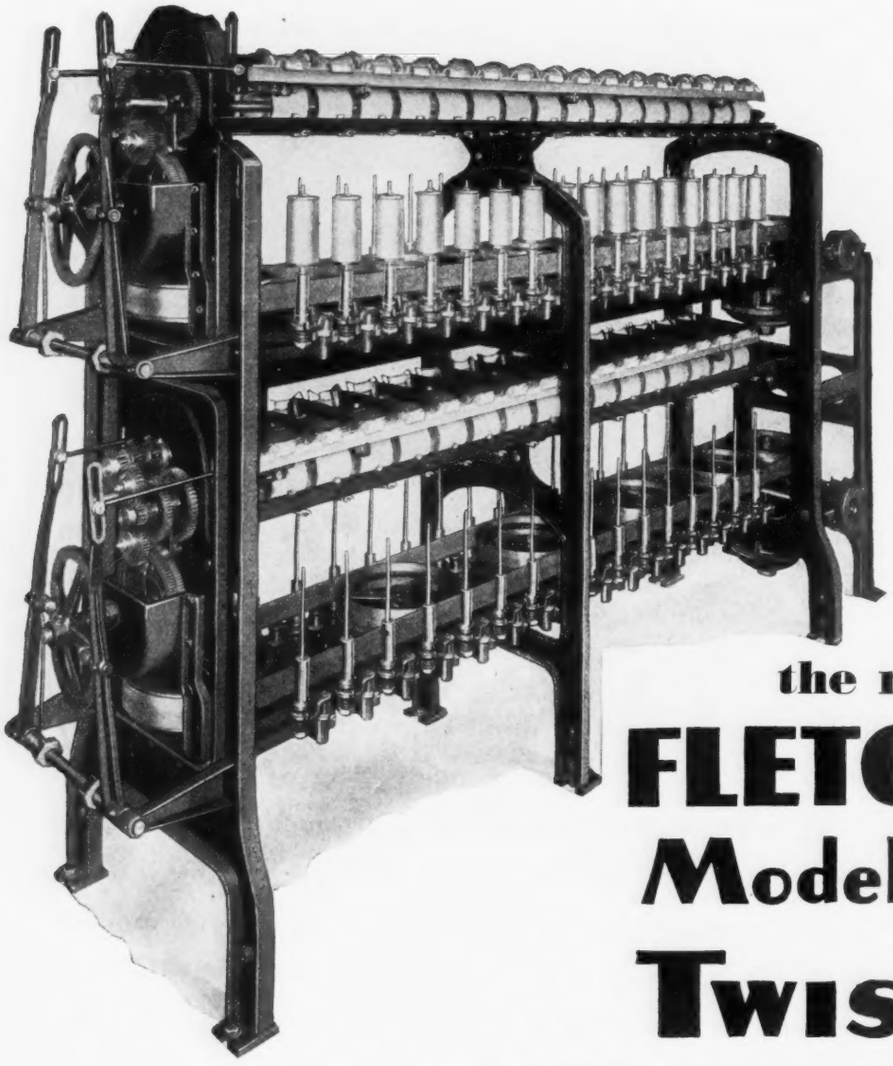
HALTON'S JACQUARDS

THOMAS HALTON'S SONS "C" and Clearfield, Phila., Pa.

*Selling Agents*

H. A. FORBES, P. O. Box 1663, PATERSON, N. J. . Tel. Lambert 385-92W
DENNIS J. DUNN, 5th and College Streets . . . . . CHARLOTTE, N. C.
ARTHUR JEPSON, 5th and College Sts. or 407 Poplar Apts., CHARLOTTE, N. C.

# ANOTHER FLETCHER ACHIEVEMENT!



## the new FLETCHER Model 33 TWISTER

## with UNIT CONTROL

The new Fletcher Model 33 Twister embodies thoroughly proven principles of engineering and design. "Unit Control" is a compact, self-contained unit which controls both twist and traverse from one end, a Fletcher development with many obvious advantages . . . Direct driven traverse . . . No teetering or lost motion . . . Absolute cleanliness . . . Accessibility, convenience, less floor space.

Standard equipment also includes "Oilwell" spindles, with a year's supply of cool, clean oil; large, power saving, idler pulleys; adjustable spindle swings; pressed steel take-up rolls driven by spindle belt; sliding motor drive. The double deck Model 33 is four inches lower than its predecessor. Send for further details.

See this remarkable machine at the Knitting Arts Exhibition, Phila., April 11-15.

# FLETCHER

THROWING MACHINERY FOR SILK AND RAYON - - CENTRIFUGAL EXTRACTORS - - NARROW FABRIC LOOMS

FLETCHER WORKS • GLENWOOD AVENUE AND SECOND STREET • PHILADELPHIA

FORMERLY SCHAUM AND UHLINGER - ESTABLISHED 1850

DIAMOND FINISH

## CURVED WEB RING

*reduces wear of heavy travelers*

Ordinary Ring

This patented ring is a sure money-saver, especially with heavy travelers. In the running position, large circle travelers lop over and cause outside wear on the usual straight web, as illustrated here at the right. But the patented Curved Web eliminates wear, as illustrated above. This means longer traveler life, smoother running. Curved Web is obtainable only in DIAMOND FINISH Rings. Specify them on your next order!

*Same price as regular ring*

# Whitinsville (Mass.) SPINNING RING CO.

# COTTON SHEARS THAT RUN THEMSELVES

## NO SHEAR TENDERS

# A GENUINE AUTOMATIC

OUR NEW

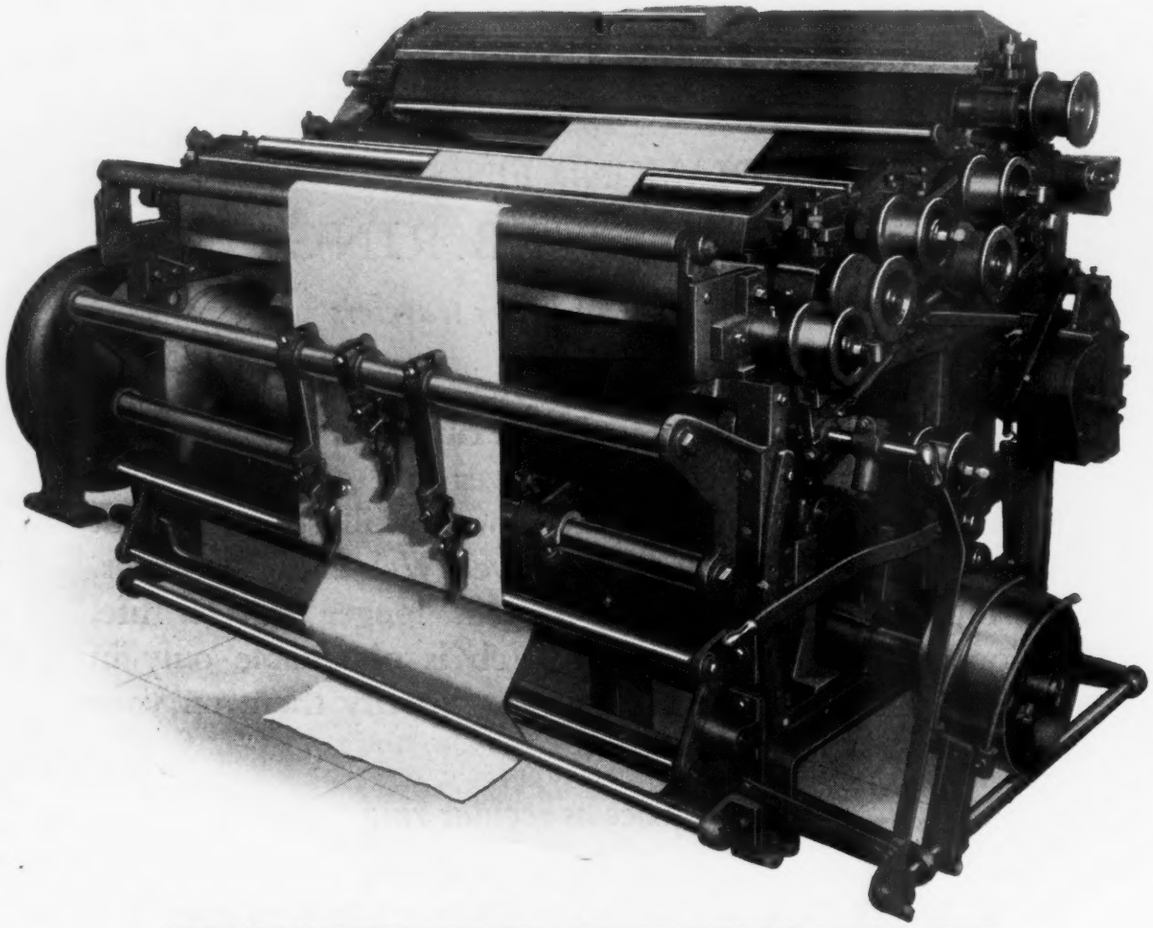
# SEAMLETHRU

TRADEMARK

MANY PATENTS PENDING AND ALLOWED

## WE PUT IT ON ANY MAKE OF SHEAR

ON APPROVAL WRITE US TODAY



*AUTOMATIC SEAMLETHRU ON PARKS & WOOLSON THREE BLADE COTTON SHEAR*

SAVES ITS COST QUICKLY THEN PAYS DIVIDENDS

P. B. RAIFORD, Jr., CONCORD, NORTH CAROLINA

SOUTHERN REPRESENTATIVE

PARKS & WOOLSON MACHINE CO., Springfield, Vermont

# THIRTY-ONE SKF BEARINGS PROVE EFFECTIVE SAFEGUARDS

ANOTHER "PERFORMANCE" USER
*The Hermas Machine Co.*

## WHERE PERFORMANCE TAKES PREFERENCE OVER PRICE

NO VITAL bearing point on the Hermas 4-Knife Shear is without the protection of SKF Ball Bearings. A total of 31 are located on the idler, drive and expanded intermediate shafts, the revolving spiral cutters and the surface wind, lower and upper delivery, tension and cloth rolls. Unquestioned dependability at all times makes SKF Performance Take Preference Over Price.

With production indicated at 50 to 90 yards a minute, depending on the type of material being sheared, there can be no compromise with bearing reliability. And SKF Ball Bearings run along smoothly, without any apparent effort, reducing friction and always insure continuity of operation. There is no danger of spoilage due to lubricant leakage for sealed housings make for a clean machine and product.

2851

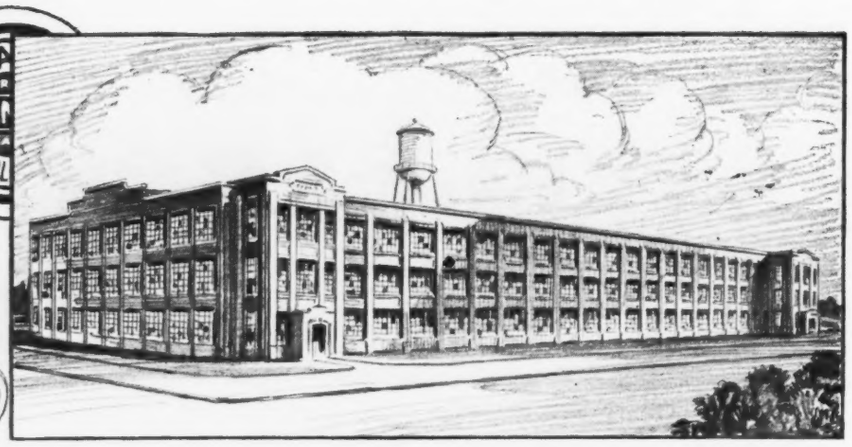
● *You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little.*

SKF INDUSTRIES, INC. 40 EAST 34th STREET, NEW YORK, N. Y.

SKF

**Ball and Roller Bearings**

1932



# The Clark Thread Company Adds a Southern Unit

IT was "OUR NEW THREAD" in 1866 when George A. Clark formed The Clark Thread Company and built the first mill on Passaic Street in Newark.

The foundation was solid, the business structure sound, and successive decades saw steady growth in the number of buildings, the floor area, machines, and the number of people supported by this enterprise.

The initials O. N. T. replaced the first descriptive phrase and became a family by-word for good thread—first in millions of homes, and then in thousands of sewing plants.

As Engineers to The Clark Thread Company, it has been our task and privilege to plan, design and supervise the erection of the recently completed unit at Austell, Georgia.

**J. E. SIRRINE & CO.**

*Engineers*

**Greenville** **South Carolina**

[An organization of national scope, prepared to serve you, regardless of location.]

1866

Completion of Austell, Ga., plant gives The Clark Thread Co., a total of 2,069,789 sq. ft., or more than 47 acres, devoted to the manufacture of thread.

# *Do your* SPRING FABRICS *meet the test* ?

It's springtime and women have turned their thoughts to new finery. Soft, light fabrics in gay patterns and warm weather shades are now the rage!

To make *your spring fabrics* satisfy the most fastidious consumer, give them the Diastafor treatment. Let this perfect sizing and desizing agent carefully strip the starch content from your cottons, mixed goods and rayons. For, Diastafor insures a perfect finish for dyeing and bleaching and gives materials that soft feel that spells perfection to the woman's mind.

DIASTAFOR is easy to handle. No change in plant set-up necessary. Let our technical man advise you, or write to—

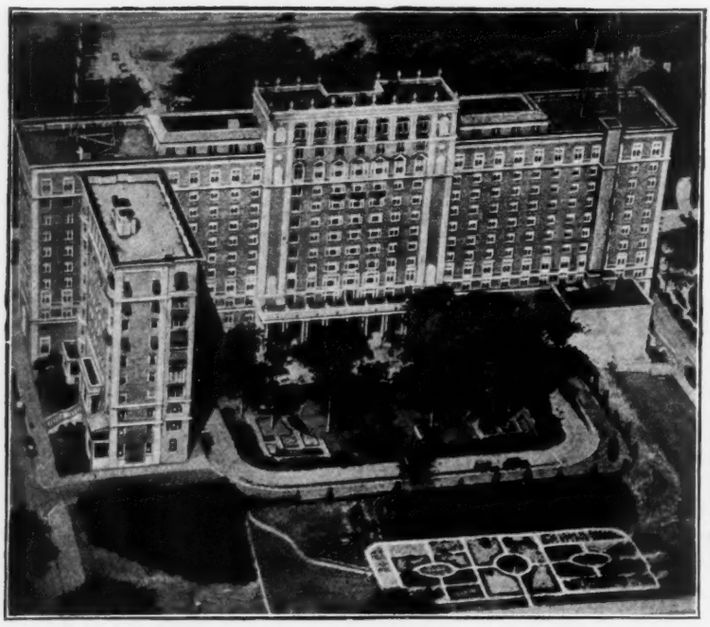
•

# DIASTAFOR

*Diastafor Department*

STANDARD BRANDS INCORPORATED

595 MADISON AVENUE, NEW YORK, N. Y.



*"Where Southern Hospitality Flowers"*

# Annual Convention

## AMERICAN COTTON MANUFACTURERS ASS'N.

### MAY 20th and 21st.

WE are proud to be the hosts to the American Cotton Manufacturers Association at their Annual Convenion in Atlanta on May 20th and 21st.

This constructive organization, one of the most powerful in the South, will meet to exchange ideas of mutual benefit and frame plans and programs for future growth and profit.

You will want to greet your old friends in the industry and meet new ones, so plan now to be present.

### *Headquarters at the Atlanta Biltmore*

The Atlanta Biltmore, ever popular as the Convention Hotel, will be the A. C. M. A. Headquarters. 600 rooms—all with outside exposure, private bath and circulating ice water. An ideal combination of hospitality, service and comfort has made this hotel a real Southern institution. Send in your reservation now.

*Rates: Single, $3, $4 and $5.*
*Double, $5, $6, $7 and $8.*
*Popular priced meals served in all Dining Rooms.*

# ATLANTA BILTMORE

*"The South's Supreme Hotel"*

ATLANTA, GEORGIA

# MONEL METAL EXTRACTOR BASKETS

## *are gentle with the finest fabrics...*

● The desire of progressive textile plants to improve quality, eliminate losses and cut equipment costs, is reflected in the rapidly increasing use of Monel Metal extractor baskets. The tendency toward standardization on Monel Metal for this purpose is due to the same unique combination of properties which has made this solid Nickel alloy the accepted material for dyeing and laundry machinery.

The finest fabrics are safe in Monel Metal extractor baskets...safe from stain or discoloration...safe from damage...because this silvery metal is rust-proof and corrosion-resisting...smooth as glass, with no rough surfaces or sharp edges. These properties also make Monel Metal easy to clean and keep clean.

Furthermore, Monel Metal extractor baskets are durable. Because of its steel-like strength and toughness, Monel Metal withstands the high centrifugal pressures which shorten the life of ordinary basket materials. And the fact that it has no coating to chip, crack or wear off, saves you costly repair and regalvanizing bills!

Leading manufacturers have standardized on Monel Metal for extractors ...particularly the smaller types which are indispensable for extracting small lots in dyehouse and boarding room. Many of these extractors are constructed almost entirely of Monel Metal. For further details, consult your regular manufacturer.

**THE INTERNATIONAL NICKEL COMPANY, INC.**
**67 Wall Street New York, N. Y.**

Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

A HIGH NICKEL ALLOY
**MONEL METAL**
NICKEL ALLOYS PERFORM BETTER LONGER

*American 30" MONEX Vertical Motor-Driven Extractor—designed to meet the popular demand for an all Monel Metal extractor for specific mill requirements. Because of its many profit-making advantages, its popular price and economy of operation, the Monex has been established as a standard extractor for every-day use in many foremost textile mills. Constructed with all Monel Metal basket and outer case. With positive, fool-proof safety features and efficient motor drive. An excellent piece of equipment for any mill using Hydro extractors. Manufactured by The American Laundry Machinery Company, Cincinnati.*

●

*"Reading" 18" Portable Centrifugal Extractor—A compact, high-speed, efficient machine equipped with Monel Metal outer shell. The power for driving is furnished by a vertical, one-half horsepower motor operating at 1800 r.p.m. Mfd. by Textile Machine Works, Reading, Pa.*

●

*American 17" MONEX Extractor—a small, all Monel Metal Extractor with all the advantages of the larger production machines. Designed for the handling of lots up to 20 pounds per load. Monel Metal outer casing, silk-finished Monel Metal basket. Motor driven, complete with positive safety devices. Manufactured by The American Laundry Machinery Company, Cincinnati, Ohio.*

You are cordially invited to visit our exhibit at the Knitting Arts Exhibition, Commercial Museum, Philadelphia, Pa., April 11th to 15th. Spaces 76 and 77.

## *Just off the press*

Your copy of this new 52-page "Illustrated Buyers' Guide of Monel Metal Equipment For The Textile Industry" is now ready. Send for it today. Use coupon.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York, N. Y.

Please send me the "Illustrated Buyers' Guide of Monel Metal For The Textile Industry".

*Name*.....

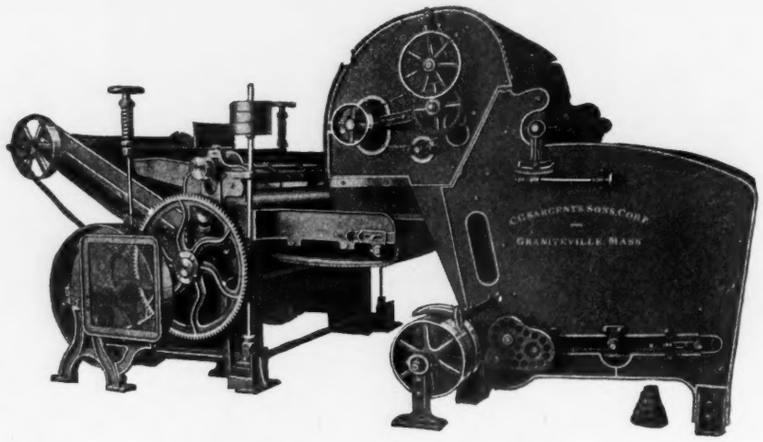
*Company Name*.....

C-4-32

*Address*.....

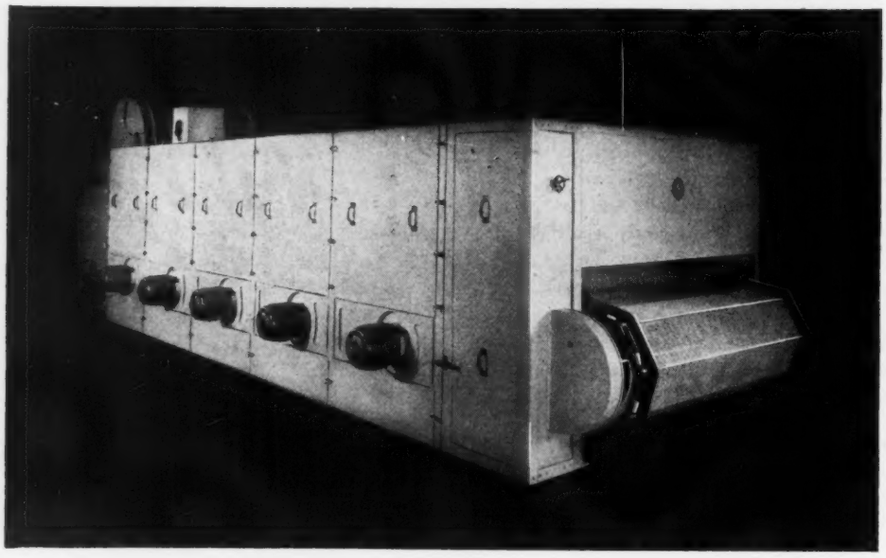
# CONTINUITY of PROCESS
## *the Key to*
# REDUCED OPERATING COSTS

SARGENT'S
CONTINUOUS
AUTOMATIC
EXTRACTOR




*and*

## The New 1932
## SINGLE APRON DRYER



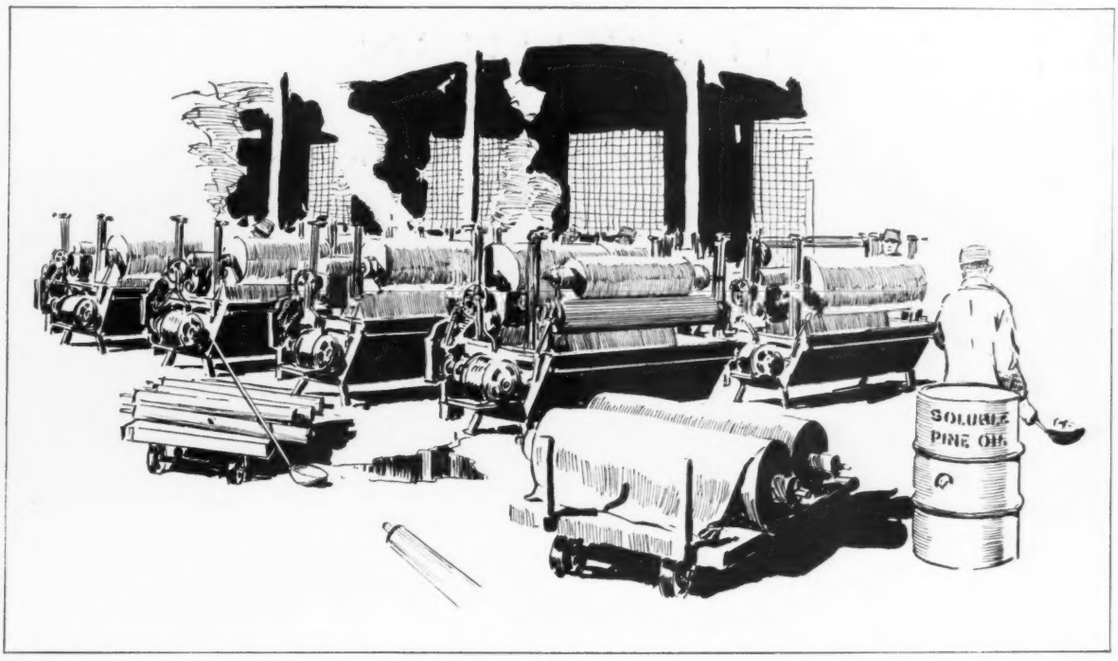
SARGENT PRODUCTS

Acidifying Machines
Automatic Extractors
Automatic Feeders
Backwashers
Backwash Dryers
Bagging Machines
Ball Winding Machines
Burr Pickers
Carbonizing Dusters
Cotton Stock Dryers
Crush Roll Machines
Dusting Machines
Mixing Pickers
Opening Machines
Special Dryers
Yarn Conditioning Machines

C. G. SARGENT'S SONS CORP.
*Founded 1852*
GRANITEVILLE, MASSACHUSETTS

*Southern Agent*
FRED H. WHITE
CHARLOTTE, N. C.

*Philadelphia Agent*
R. C. JEFFERSON COMPANY
640 DREXEL BLDG., PHILADELPHIA, PA.




# The Value of Yarmor in Dyeing Operations

As a wetting out and leveling agent, Hercules Yarmor Steam-distilled Pine Oil, after being made soluble by textile chemical manufacturers, is being used extensively by dyers of cotton cloth.

Dyers have found that soluble Yarmor Pine Oil reduces the surface tension of the dye liquor, thereby enabling the dye to penetrate evenly, resulting in the proper depth of shade throughout the fiber. This level dyeing produces properly-matched shades of depth and brilliance of color.

If you have not used soluble Yarmor Pine Oil in your dyeing operations, we suggest that you ask your textile chemical manufacturer for information, or write to us.

Steam-distilled Pine Oil
Steam-distilled Wood Turpentine
Wood Rosin
Alpha Terpineol
Commercial Abietic Acid
Methyl Abietate
Nitrocellulose
Chemical Cotton

NAVAL STORES DEPARTMENT
HERCULES POWDER COMPANY
INCORPORATED
995 Market Street....Wilmington, Delaware

Branch Offices...Chicago...New York...St. Louis...Salt Lake City...San Francisco

00-13

# OUR CONTRIBUTION TO THE ADVANCEMENT OF THE TEXTILE INDUSTRY SHOWS MARKED PROGRESS

The development of the past generation in textile processing is greater than that of all the preceding centuries . . . yet we have barely scratched the surface of what is possible today with our ultra modern laboratory facilities—our expert and introspective chemists and engineers.

Arnold, Hoffman has shared largely in the progress of the past. But the needs of today have necessitated a far greater concentration on the individual problem—your problem. It may be that some particular processing problem, worrying you right now, has already been solved by Arnold, Hoffman. But regardless of its complexity Arnold, Hoffman will work out its solution for you.

This company is as accessible to you as your telephone or typewriter. Get in touch with the office nearest you.

## ARNOLD, HOFFMAN & CO. Inc.

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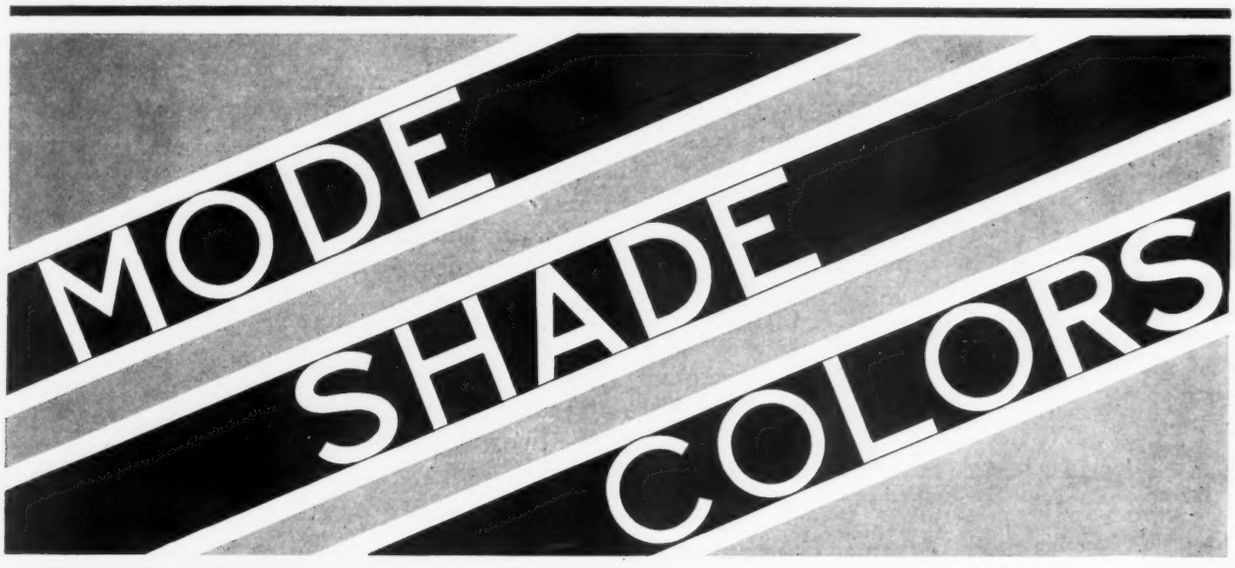


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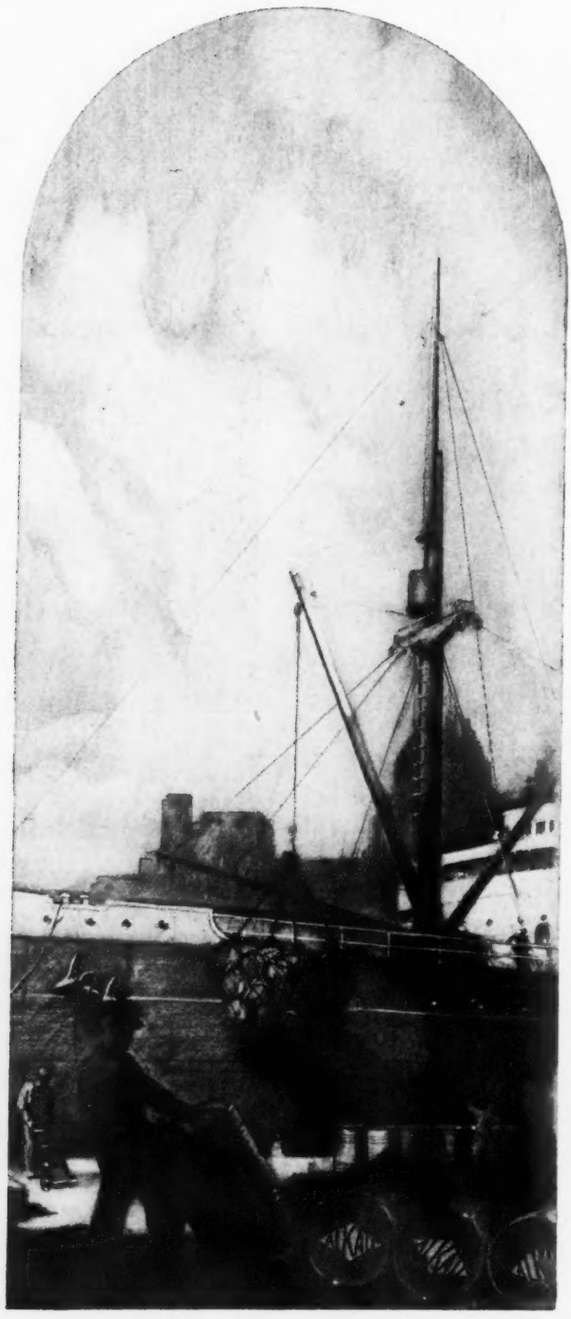

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Vol. 96 **COTTON** No. 4

April, 1932

W. R. C. SMITH, Publisher
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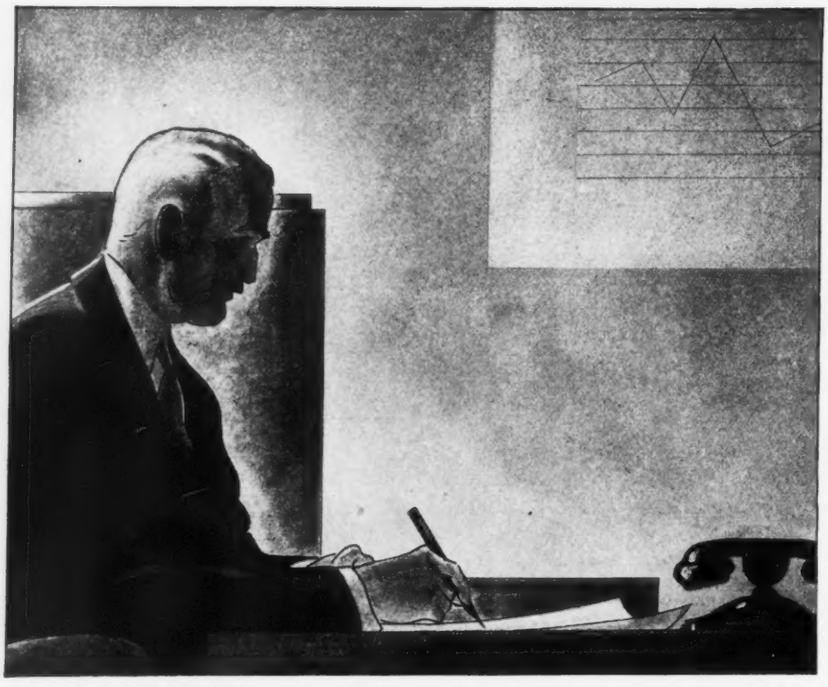

# PLANNING FOR *Profits* IN 1932

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COTTON

Vol. 96 April, 1932 No. 4

# Knitting Week in Philadelphia

DURING the week of April 11th to 15th inclusive, the annual trek of the various interests in the knitting industry to Philadelphia will occur. The attractions which will make the Quaker City the Mecca of the knitting trades is the 28th annual Knitting Arts Exhibition, to be held on these five days in the Commercial Museum there; and the annual convention of the National Association of Hosiery & Underwear Manufacturers, sponsors of the Exhibition, which will occur on Thursday of Show Week, April 14th.

More than 140 individual companies have contracted for exhibit space at the Exhibition, comprising over 310 booths in which to display their products to manufacturers of hosiery, underwear and other knit goods from all sections of the United States, who will attend the annual get-together of the knitting trades. At this writing, over 80 per cent of the total space occupied at the 1931 Exhibition had been taken for this year's show, and last-minute reservations were expected to make the Show approximately the same size as that of last year.

Manufacturers of knitting machinery will as usual be an important factor at the Exhibition. Every important manufacturer of seamless machines and every manufacturer and importer of full-fashioned machines has taken space, and their booths will as usual be magnets for the knit goods manufacturers attending the show. Yarn spinners and dealers, manufacturers and distributors of oils and chemicals, producers of auxiliary and other equipment and supplies in general will be represented in large numbers.

The Exhibition is under the general management of Chester I. Campbell, who, with his capable corps of assistants, has handled these Shows in recent years.

### Annual Convention of Knitters.

In keeping with the practice of recent years, the annual convention of the National Association of Hosiery & Underwear Manufacturers will be held during the Show, and plans for the convention, which will be the 28th annual meeting of the Association, provide for a morning session at 11 a. m., on Thursday, April 14th, in the lecture hall of the Commercial Museum, at which annual reports of the officers will be made.

Among those of special interest is the annual address of William Meyer, president, Apex Hosiery Co., Philadelphia, and president of the National Association, analyzing the condition of the two industries, and commenting thereon. Ernest Blood, of John Blood & Co., Inc., Philadelphia, treasurer of the Association for many years, will deliver his annual report.

The session will close with an address by a speaker of note, whose name cannot be revealed at this writing as the engagement is conditioned upon there not arising an unforeseen circumstance which will prevent his appearance.

### Annual Luncheon.

The annual luncheon will be held at 1 p.m. on Thursday, in the dining hall of the Commercial Museum. As usual, the full capacity of the relatively limited accommodations will be taxed.

This luncheon, as is well known, enjoys an attendance of leading hosiery and underwear manufacturers, machinery, equipment and supply manufacturers, and their friends in the trade. Arrangements have been made this year to make this a pleasant and profitable contact in every way.

One of the outstanding orchestras in Philadelphia has been engaged to furnish music. At the conclusion of the luncheon, the toastmaster will present Count Ernesto Russo, who enjoys the reputation of being a most interesting after-dinner speaker. His remarks will contain food for thought, but will be served in part with a vein of humor which should be highly entertaining.

This year plans are being made for a brief afternoon session of members. At this session officers of the Association will present certain new plans intended to improve or solve the more critical problems of the industries by concerted action.

The Exhibition and convention will afford a common opportunity for the knitting manufacturers and exhibitors to become acquainted with Earl Constantine, who is the new managing director of the Association. Mr. Constantine has already had group meetings with manufacturers in various sections of the country, and Show Week will provide the occasion of more intimate contact between him and the members of the association and exhibitors.

The number of firms that will exhibit indicates the realization of the value of the Exhibition, and there is every indication of an attendance of manufacturers surpassing all previous records, knitting manufacturers all over the country recognizing the importance of alertness to the latest machinery and equipment and the latest products and services of all kinds available to them.

# Recent Trends in Running Rayon

By H. W. Rose
The Viscose Company.

**THE prevention of dye streaks, the successful adaptation of the high speed warper and cone creel to rayon warping—these and other useful process subjects are competently covered in this interesting and up-to-date discussion.**

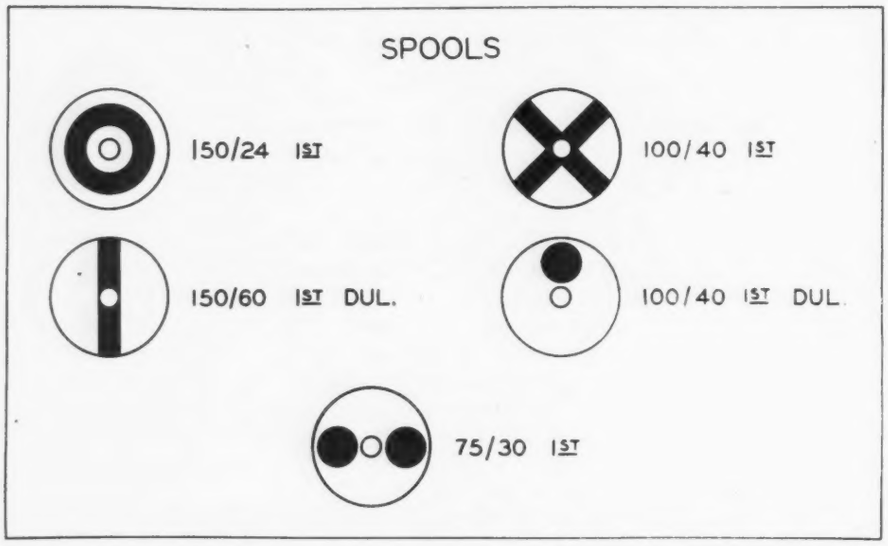
**The article, prepared by a man in intimate and active touch with rayon handling problems, gives also a helpful discussion concerning the need for closer co-ordination and co-operation in serving profitable and necessary markets for rayon fabrics.**

THE MAJORITY of weaving mills running rayon today are equipped to make their own warps. Several years ago when rayon-filled cotton-warp alpacas were in the forefront, the weaving mill was usually equipped only to wind from skein to spool to bobbin. In this process several points had to be worked out. The mill decided whether to wind by rolling off the spool or ballooning over the end, whether to put tension on the yarn itself or on the spool, whether to line the shuttle with one fur or another, and whether to run one shuttle or two. The problem of shiners arose and all of these points were worked out to put the yarn into the cloth in as nearly its original condition as possible. Then more fabrics were developed with rayon warp, and a similar sequence of problems arose and were solved, or are still in process of being worked out.

An important problem in rayon warp goods is the one of dye streaks. By far the largest volume of such goods is sold in the gray for dyeing and finishing by another party. This very fact makes the control of warp streaks more difficult. When an article is carried through all its processes to its finished condition by one concern the processes can be concentrated on the merits of the finished article; but when the article on its journey toward completion passes through more than one concern, the chances are that some of the co-ordination is lost, and that ideas differ as to the merits of the finished product, or that these ideas are influenced by other considerations than merit alone. Thus we find that certain points must be observed by the weaving mill, others by the dyer and finisher, and that the commission house, or seller of the goods, and the converter or purchaser of the goods should keep a perspective on both so that the two may be efficiently co-ordinated, to the end that the best fabric possible for the price may be put on the counter.

Behind these, the rayon manufacturer is working in the first place to provide the weaving mill with a yarn that will dye as evenly as the latest chemistry and manufacturing ingenuity can make it. If it happens that a lot does get by with a bad dye index, it is not ordinarily difficult to determine the fact, particularly if a direct dye has been used. If the yarn has been put through an indanthrene, it is more difficult to tell from that particular yarn what its original dye affinity was, but even then it is possible to answer the question by approaching it in various ways. The manufacturer not only tries to make a uniform yarn, but he tries further to lessen the weaving mill's burden by shipping him from the same manufacturing lots so far as possible.

The weaving mill should take care first of all to use cases in the order of their arrival, always putting into process the oldest case first from any series of shipments. Then the mill must have a system of yarn identification that is as near fool-proof as possible. The greatest number of serious warp streaks are caused by yarn mixtures. If a winder hand opens a bundle and finds a skein with an odd lacing, the skein should be set aside and reported. To aid this vigilance some mills post a card on the spooling machine on which the type of yarn is printed and the lacing colors are painted, or the actual lacing strings from a skein are inserted. The operatives are then constantly sure of the skein identification, and nothing short of gross negligence will allow a mixture on the spooling frame.




Showing a sample list of symbols used on the ends of spools to identify various types of yarn . . . . . .

Spools can be of different types if only a few yarns are used, but if several yarns are in process a system of colors is necessary. Placards should be posted in full view of those handling the spools at the

spooler, at the bin or storage point, and at the creel and filling winder. Such placards show the color symbol for each type of yarn as it appears on the spool, and also a list of tints used in identifying twisted yarns.

A further precaution is observed by some of the more enterprising mills. After the warp is on the loom, a head end is woven and cut off and the swatch is dyed by hand in a bucket. A critical blue dye is used, and a mixture of warp threads will show up immediately. It is tedious business to pick out those ends that may represent a mixture, but such precaution may save, and has saved in actual practice, thousands of yards of goods. Its value can be attested by

| TINTS | |
|---|---|
| BLUE | 75/30 VOILE |
| PINK | 100/40 55 RIGHT |
| VIOLET | 100/40 55 LEFT |
| ORCHID | 100/40 DUL. 55 RIGHT |
| YELLOW | 100/40 DUL. 55 LEFT |
| GREEN | 75/20 SERACETA |
| ORANGE | 100/28 SERACETA |

Placard showing a sample list of tints used on thrown yarn for identifying type and twist . .

the man who has sent out an apparently beautiful piece of cloth only to have it come back from the dyer with one white thread running its entire length.

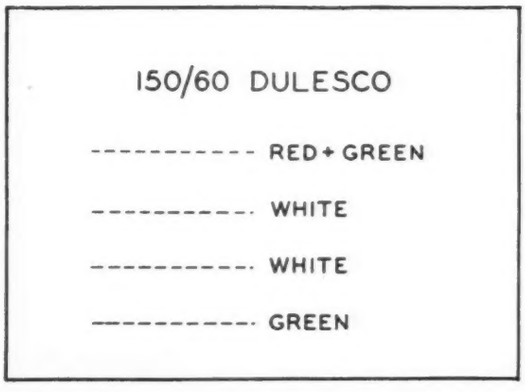
Since weaving mills have gone largely into making rayon warp goods, one of the greatest innovations is the high speed cone creel and warper. This combination of machines has been extensively installed in southern mills where the cotton, or section beam system of warping is more prominent than the silk, or horizontal section system. The cone creel can be adapted to either system, but so far it is more generally confined to making section beams. Probably the main reason for this predominance is one of economy, although it is equally probable that it is a natural evolution through the cotton warping machinery which was available when rayon was adopted by the cotton mills.

The cone creel is usually equipped with battery spindles so that there are two cones, or even more, to each warp end. The rayon manufacturer co-operated by providing a cone wound in such a way that the inside end is free to be tied to the outside end of the adjacent cone. Thus, when the yarn runs down to this inside end it transfers without interruption over to the adjacent cone. The operator then replaces the empty cone and ties the inside end of the adjacent cone to the new cone. The warper can run indefinitely in this way without stopping. The rayon manufacturer also developed a type of cone for this work which allows the yarn to transfer without any drag of the last few turns. First quality yarn is used almost entirely, as the purpose of economy in the high speed warper would be defeated by frequent stops caused by an inferior yarn.

Speeds are now possible on the cone creels that were unheard of with the spool creels. The fact that the yarn balloons off the cone makes this possible. In rolling a spool there is considerable inertia in starting and stopping that has to be dealt with. At high speed the spools would start with a jerk, and they would tend to run a bit after the warper stopped. From a cone only the weight of the yarn itself comes into account.

Aside from the economy of operation the cone creel has offered one point concerning quality. The cones do not all have to contain the same amount of yarn to make a warp run out even. With the advantage of being able to tie in with the warper in operation comes the added advantage of having the knots distributed through the warp, where they are fairly negligible, rather than having them all in a hundred yards of warp, where the particular piece of goods is doomed to seconds before it is woven. In a high-priced cloth, however, the latter may be preferable.

So far, the high speed warper is used largely for




The dotted lines represent actual lacings from skeins, preferable to painting the color on the chart, as sometimes there is a variation in the lacing which the operator should notice . .

fabrics that are being turned out on a production basis. It loses some of its purpose of economy if frequent changes of specifications and types of yarn are required, and generally speaking, the best fabrics are prepared by more leisurely methods. However, the creel and warper are only slightly over a year old, and at the rate that they have been improved and adapted to special requirements, it remains to be seen how long it will be before they can turn out warps for the very best fabrics at equally high speed and thus become general practice in rayon weaving mills. The whole process has been watched carefully to see whether there might be a joker in it, but so far, where a good yarn has been used, and where the machine has been carefully designed and adjusted, the system seems to be justified.

Assuming that uniform ends have been beamed and are ready for sizing, the question of the size to use and its application must be considered. A frequent cause of warp streaks is a residue of sizing material left on the yarn that cannot be removed. It might be impossible to remove the size entirely, either on ac-

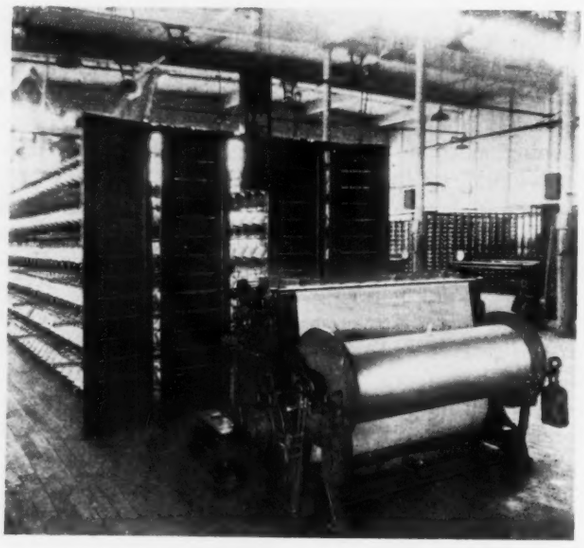
count of the kind of size or its application, or both in combination with a lubricant in the size. If, for any reason, oils, sulphonated oils, or tallows are used as lubricants in connection with glue or starch size, the compound is liable to be baked on the warp at the slasher. This will make it difficult, if not impossible, for the finisher to remove it completely in the boil-off without kiering or going to disproportionately heavy expense. If the size for any reason is not completely removed, dye streaks in the warp are inevitable. A simple glue-soap size or a starch-soap size are best and are easily and completely removable.

Assuming again that uniform ends have been creeled up for making a warp, it does not mean that they will be uniform in the cloth. When the question of shiners was new and such a critical one, it was found that they were the result of uneven stretch, from one cause or another. In the same general way, uneven stretch in the warp threads can cause both warp shiners and uneven dyeing. The best way to avoid irregular stretch is to avoid any stretch at all in the warp as far as possible. After creel tensions have been regulated to obtain as uniform a tension as possible on all the warp ends, and the ends have been beamed in this way, the question of stretch on the sizing machine, or slasher, arises.

### Stretch at Slashers.

Some stretch in slashing is unavoidable. Every mill man knows that. The rayon warp is wet out by the sizing solution and in that condition is under certain tension until it dries and reaches the warp beam. But how much stretch to allow? That question has been answered by such a wide variety of practice, with a corresponding variety of results, that it is worthy of some consideration.

It has been found that rayon will give different dye effects if subjected to two widely separated degrees of stretch. In other words, one piece of yarn dyed in its natural condition while loose will not have the same shade as one dyed after being strained, or while being stretched out to the straining point. This means that if too much stretch has been taken out of certain ends in the slashing process, these ends may dye a different shade from others in the same warp which were not carrying the load. It also means that if the goods are stretched out too much in the dyeing process, and certain ends are strained, they may not take the same degree of dye as the others. The theory has been tested by making a warp, during the slashing of which more tension was added every ten yards. The woven piece was then dyed, and while it showed a level color at one end, further down the length warp streaks appeared which grew more pronounced toward the other end.



Courtesy, Cocker Machine & Foundry Co.

Warping Rayon at High Speed.

No hard and fast rule can be set as to the degree of stretch for slashing and finishing. Different makes and different types of rayon vary in extensibility, and structure, and their susceptibility to dye variation under conditions of stretch will necessarily vary. As a general rule, however, no slashing should be allowed to extend the yarn more than 5 per cent, while 4 per cent and even 3 per cent is quite general and safe practice. This means actual stretch of the yarn and is exclusive of the take-up in weaving. Stretch in finishing varies more according to the weave, but it should be kept down to a minimum.

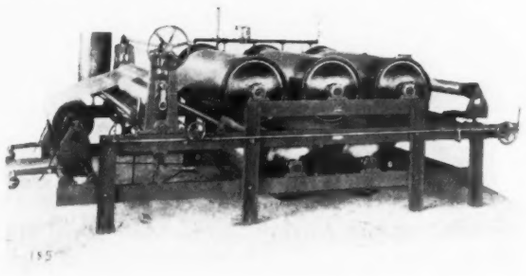
This question of warp stretch has been a vital one in the lining trade aside from the dye results. For a couple of years in the recent past it threatened to put an untimely end to that outlet for rayon which had only just been opened. It took some persuading, in the first place, to get skeptical clothing manufacturers to use rayon linings in their coats. Then, when the initial inertia had been overcome by proving the superior wearing quality of rayon linings, and the manufacturers one by one began accepting them, an obstacle arose. They began getting coats back from the users with complaints of lining shrinkage. Some linings shrank so badly that they lifted the bottom edge of the coat and curled it under.

At first sight this development seemed alarming, but the clothing manufacturers, convinced that the rayon linings would outwear other types, began investigating. They tried shrinking the goods themselves before cutting it up and putting it into coats. This pre-shrunk cloth proved quite satisfactory. Some enterprising manufacturers then set up a regular routine of shrinking all rayon linings after receiving the goods from the finisher.

This practice continued until only a comparatively few months ago when the problem was recognized and taken up by parties further back up the line. Such pre-shrinking in the shop of a clothing manufacturer was necessarily a crude affair. He did not have equipment for handling great yardages of wet goods in a finishing operation. In fact, why should he? His business was making garments, and not finishing cloth. He was buying a piece of goods that was supposed to be finished; then why should he have the inconvenience and expense of re-finishing the same goods?

The answer lay in the fact that he was buy-

ing his goods by the yard. If he had been buying it by the pound, there would have been much less shrinkage in the material when it arrived at his shop. The converter who bought the goods in the gray and had them finished did not want to lose yardage by contraction. In fact, if the finisher by applying a little more tension in the finishing, could come out with a little extra yardage it was just so much profit. And in the same way the weaving mill figured so much yarn to buy, and any additional yardage gained in slashing was so much profit. This stretching of yarn and stretching of cloth became general practice under conditions of keen competition and a continuance of it would soon have closed the rayon lining field, as soon as the patience of the garment maker was exhausted.



Courtesy, Charles B. Johnson.

A Rayon Slasher.

At that point the rayon yarn manufacturer stepped in. He was neutral as far as competition was concerned among weaving mills on gray cloth and among converters on finished goods. His interest was in seeing that the ultimate consumer received a worthy piece of merchandise free from faults that would work to the detriment of rayon. To insure such perfection in rayon linings he had to eliminate destructive competition on yardage.

To do this, he gathered the prominent converters together and, after throwing light on the subject with the broad perspective of the industry as a whole, convinced them that it was to their own benefit as well as to others in the sequence, to change or to modify the practice of over-stretching rayon lining goods. It was found that the idea was not new, for one converter had already made experiments along that line, and others were only held back by the lack of just such a meeting. Experiments were carried out, and it was found that the cloth could not be finished to dead shrinkage without leaving it with a dull lifeless finish. It was agreed that with a small percentage of stretch in the warp, depending somewhat on the construction of the cloth, a finish could be obtained that met all requirements in appearance and feel, and still without causing trouble later in the finished garment. Clothing manufacturers allow for this small percentage of possible shrinkage in the cloth by a pleat in the bottom of the lining or merely extra fullness.

With the garment men and the converters agreed now on the general practice to be followed in the lining trade, it remains for the weaving mill and its selling house to understand the problem and to co-operate. If the weaver stretches his warp out 10 per cent or more, then the finisher has just that much more contraction to take care of than he should have, and the converter is faced with a corresponding loss in yardage of the goods he bought. As mentioned, if one concern weaves the goods, finishes it and sells it to the garment shop, it does not matter, from a dollars and cents standpoint, whether the slasher and weaving stretches the warp 5 per cent or 10 per cent; but when a converter buys 100 yards of goods and finds that in order to deliver it to his customer as pre-shrunk goods he gets only 90 yards or less from the finisher, the chances are that he is going to seek out the weaving mill that can give him goods with the least stretch in it. On the other hand, the weaving mills who have recognized this fact, and have minimized the stretch on their rayon warps, are the ones who can obtain the best prices from those converters who are living up to their agreement. That they are living up to it is witnessed by the advertisements in trade papers on "pre-shrunk" linings. Nothing is easier to prove if the cloth does not measure up to the requirements of this term.

It has been over a year since the first meeting of converters on that subject, and much has been accomplished since. The subject is dwelt on at length here because it is important in more fabrics than lining cloths. Rayon has been found to possess a characteristic that makes it unique among textile fibers. If rayon is stretched while dry it remains stretched, as it possesses almost no elasticity, but if it is then wet out and allowed to dry free it will contract nearly to its former condition, provided it has not been stretched to the straining point. Some difficulty is found in voiles and other drapery materials, when a considerable shrinkage is noticed after they have hung a season. The natural moisture in the atmosphere is sufficient over a period of time to cause a contraction, exactly as though the goods were wet and dried without tension. The only solution is for the weaver and the finisher to co-operate in turning out the material with a very minimum of stretch in it.

One aspect of warp streaks is more difficult to overcome than the others. It is more difficult because it is not a technical problem that can be attacked scientifically and solved by manufacturing methods. It is a problem of cloth merchandising. It is an evident co-incidence that rayon goods are much more liable to warp streaks in times of a declining market than when business is good. There might be a partial explanation of this fact by technical points. On a declining market, when the demand for goods is poor, a mill may shift from one pattern to another getting out samples, or have cancellations and changes on an order in process, with the result that mixtures of yarn are liable to enter the goods. When the routine is upset in a mill it is easy to draw on two different lots, or to start up a warp with spools containing tailings from another lot. Therefore, when the market is not going so well, a mill must be more vigilant than ever to see that its routine is maintained.

The serious difficulty referred to, however, comes from the purchaser of the cloth who has a loss in his order. Then the goods is examined more minutely than ever before, and if the loss amounts to several cents a yard the chances are pretty even that warp

(Continued on page 84.)

# Penetrants and Wetting Agents—Part One

By Andrew J. Kelly
Burkart-Schier Chemical Co.

**THIS is the first installment of a two-part article by Mr. Kelly on this subject, correlating the data available on the solvents and penetrants in use by or available to the textile industry. This part lists the solvents most commonly used in wet finishing compounds; and the second installment, to appear in an early issue, covers some of the other solvents, such as carbon tetrachloride, tetralin, trichlorethylene, and others. There will also be a general summary and discussion on the manufacture and practical application of these agents . . . . . .**

DIRECTED wherever the interests of the textile chemist and colorist are centered, the spotlight of experiment and research has for some time been focused on the problems involved in the use of solvents and penetrants in the wet finishing of textiles. The natural result of this illumination has been the appearance of a great number of papers and articles dealing with these chemical agents. Penetrants and wetting agents, their uses and abuses, have been studied from nearly every angle, and the findings well publicized. Data of considerable value to every textile chemist has been made available. It is no exaggeration to say that the textile trade journals for the past thirty months constitute a well-nigh complete bibliography on the subject of these solvent and wetting agents, concerning both the solvent chemicals themselves, and the prepared water soluble compounds in which form they are generally offered.

It will be the effort here to attempt to correlate, at least to some small extent, some of the data at hand, and to present a general discussion of the solvents and penetrants in use by or available to the textile industry. Only those which are water soluble or which solutize easily with sulphonated oils or soaps will be considered—in other words, only those which are logical for use in wet finishing. The boiling out, wetting out, and cleansing efficiency of the various solvents will be considered, with some attention to their effectiveness in spot removing. There is little mention made nowadays of the troubles with spots and stains that do appear occasionally at least in even the best regulated dyehouses. They present a problem, not an ever-present one happily, that sometimes defies all ordinary efforts at solution. Some of the penetration agents offer aid in this direction, and nearly all of them act as spot deterrents or inhibitors. In discussing the solvents, penetrants, and wetting agents, they will generally be considered as they are generally used—in a prepared mix with soluble oil or soap ready for use in the bath. However, the properties of the solvents themselves must also be observed.

### Pine Oil.

To the pine oil manufacturers must go much of the credit for making us "solvent-conscious"; that is, of course, if you feel with the writer that credit is due. But the pine oil manufacturers themselves were probably made solvent-conscious by the work that was being done by certain individual mill chemists, really pioneers in a new line of thought, who had noted some time before that pine oil could be easily solutized with sulphonated castor oil, and that the mix had certain properties in the way of dye penetration not then available in any other agent. So pine oil was in use for some time in these scattered cases before its producers began to recommend its general use for textiles. When they did begin, however, it was the active and intelligent advertising campaign which they promulgated which really first interested the average mill man in the idea that solvent and wetting out compounds might be of some value, and were certainly at least worth considering. Incidentally, it likewise interested the manufacturers of textile oils and specialties in the possibilities of new products and new sales. Makers of other solvents cast a heedful eye over the situation; perhaps here was a new market for them. Soon a flood of research was under way, and innumerable agents were considered, innumerable angles studied.

Out of this tremendous effort new and valuable data was bound to come. Soon there were other advertising campaigns, pamphlets and booklets were issued, and in truth an entirely new and very modern phase of textile finishing was born. In the field of organic chemistry the old saying "seek and ye shall find" is borne out in an amazing manner. It is a well known fact, however, that practically any organic solvent, if miscible with water or if evenly dispersed in colloidal condition, will lower the surface tension of water and speed its wetting action, also acting to some extent as a penetrant. To find a solvent or wetting agent is therefore exceedingly simple—to choose the most satisfactory one will involve consideration of action on the fibers, price, toxicity, and other factors which will suggest themselves for any particular operation.

Among the solvents and chemicals which are used or recommended for use in penetrating and boiling out mixtures are pine oil, carbon tetrachloride, acetone, alcohol, cresol, trichlorethylene, ethylene dichloride, benzol, gasoline (or Stoddard solvent), tetralin, hexalin, dichlor ethyl ether, ethylene glycol monoethyl ether, chloroform, ethyl acetate, and others. (Accompanying this article is a table showing some of the physical properties of these commonly found solvents.) Many of these have homologues or related chemicals, also available, and generally very similar in action. For instance, with benzol may be classed toluol and xylol, either of which may be used where benzol is

indicated. With trichlorethylene we may class dichlorethylene as very like in solvent properties. Of the solvents listed, only alcohol, acetone, and ethylene glycol monoethyl ether are completely miscible with water, the others are water insoluble and for use in wet finishing must be solutized. However, the water soluble as well as the water insoluble solvents are usually incorporated with sulphonated oil or soap before being added to any bath, for the solutizing agent lends desirable properties of its own. Some of the solvents are finding their first commercial application in the textile industry, while some of the others are merely here finding a new phase of usefulness. Pine oil has for some time been used in the flotation process in metallurgy; carbon tetrachloride is an excellent fire extinguisher and is trade-marked as such—it is also being recommended to the dry-cleaners to replace Stoddard solvent; for this latter use trichlorethylene is also recommended. Acetone is of course heavily used in the manufacture of cellulose acetate yarn. There is no doubt that the solvents now in use in general textile practice will serve to encourage research resulting in new and even more versatile products.

**A Partial List of Solvents Used in Penetrants and Wetting Agents.**

| | Boiling Point | Specific Gravity |
|---|---|---|
| Acetone | 133 deg. F. | .792 |
| Alcohol | 173 deg. F. | .789 |
| Benzol | 176 deg. F. | .879 |
| Carbon tetrachloride | 169 deg. F. | 1.584 |
| Chloroform | 142 deg. F. | 1.499 |
| Cresol | 390 deg. F. | 1.039 |
| Dichlorethyl Ether | 335 deg. F. | 1.222 |
| Ethyl Acetate | 171 deg. F. | .900 |
| Ethylene Dichloride | 182 deg. F. | 1.254 |
| Ethylene Glycol Monoethyl Ether | 275 deg. F. | .929 |
| Hexalin | 311 deg. F. | .945 |
| Tetrachlorethane | 297 deg. F. | 1.580 |
| Tetralin | 403 deg. F. | .975 |
| Toluol | 231 deg. F. | .866 |
| Trichlorethylene | 189 deg. F. | 1.475 |
| Xylol | 288 deg. F. | .880 |

Courtesy, Chattanooga Brazing & Welding Co.

**Silk Skein Processing Machine.**

Pine oil is probably the most generally used of the solvents under discussion. The advantage of an early start has doubtless helped to establish it in this position but it is quite efficient. Its pleasant odor is an advantage in wet finishing, as is its high boiling point. It lends itself admirably to compounding with soaps and oils—half and half mixtures of pine oil and fifty per cent sulphonated castor oil make excellent penetrants, while a good sixty per cent neutral finish sulphonated castor oil will solutize four or five times its own volume of pine oil. This latter mix is used as pine disinfectant, as well as a penetrant. Probably more information on actual textile practice is available for pine oil than for any of the other solvents. Its compounds are unquestionably of aid in boiling out, wetting out, and penetrating dyestuffs; they are also useful in bleaching. The pine oil compounds do not show any noticeable corrosive action, but it must be borne in mind that any metal that is thoroughly clean, and grease-free, as is a machine in which soluble pine oil has been run, is rather sensitive to the corrosive action of the atmosphere if left standing empty. This is seldom the case with any wet finishing equipment.

### Alcohol and Acetone.

The use of alcohol and acetone in textile penetrants is limited, and seems to be declining. However, acetone is a powerful solvent for grease and oil and is in addition a good spotting agent for vegetable and food stains. It should not be used for spotting fabrics containing cellulose acetate yarn because of its solvent action on this fiber. The low boiling point and the comparatively high cost of acetone is a deterrent to its general use, as is its flammability. Alcohol is not a grease or oil solvent—castor oil, alone, is soluble in alcohol. The fatty acids are on the other hand soluble, but this is generally of little advantage in a textile penetrant. Furthermore, alcohol does not work efficiently in the small percentages generally used in wet finishing. A little does not go a long way. Nevertheless, there are occasions where the use of compounds of alcohol and acetone is advantageous; often in combination with each other. They work very well as cold water wetting agents, and in some cases increase the solvent and cleansing action of the sulphonated oil or soap present in a bath. Alcohol finds use in a type of random dyeing where a speedy evaporation of the dye liquor is necessary. There are some other uses for acetone and alcohol not mentioned here, but these two solvents are not among the more important ones used in wet finishing. This is also true of ether.

### Cresol.

Cresol (hydroxytoluene) is one of the penetrant and wetting agents that is finding increased use in the industry. Compounds of cresylic acid (ortho,meta, and para cresol) have become quite common. Cresol is not quite so easily incorporated with soap or sulphonated oil as is pine oil, and to incorporate a high percentage requires skillful manipulation. It may be mentioned that cresylic acid is a corrosive poison, and must be handled with great care. It will produce severe burns in a few moments if allowed to come in contact with the skin without being washed off immediately with soap and water, or copious water. The solutized compounds of cresol do not show this violent action, and are quite safe to handle; simple precautions may be taken against splashing the compound itself. In the dyebath or other textile dilutions the only action is a mildly antiseptic one. Many of the cresylic acid

preparations contain two to four per cent free alkali (calculated as KOH) and find use in boiling off various textile fibers, either alone or in combination with soap or other agents.

The use of cresylic acid compounds in combination with caustic potash or other alkalies as a means of degumming silk in the presence of acetate yarn has been advocated by at least one manufacturer of synthetic fibers. Some special types of purified cresols (and sodium phenolate) have found use in mercerizing, lending particular qualities to the yarn and aiding the process of mercerization. There are now on the market several more or less complex compounds containing the cresols in combination with sulphonated castor or sulphonated red oil, pine oil, and sometimes other solvents. These mixes usually show 1 to 2 per cent free alkali, the cresol acting as buffer and enabling the alkali to act slowly. Such preparations are based on the theoretical efficiency of the individual entities, backed by experiment with the various combinations. They are generally dependable boiling off and cleansing agents, and are characterized by their activity in even a very dilute solution. In some cases, cresylic acid will act as a mutual solvent, that is, its presence will permit the incorporation of larger quantities of other solvent than would be possible otherwise. For instance, in a compound of cresol and sulphonated oil, more carbon tetrachloride can be carried stably than is possible with the sulphonated oil alone. In passing, the fact that cresylic acid is a very active antiseptic may be of interest. It is said to be three times as efficient a bactericide as phenol (carbolic acid) and yet is less corrosive.

Courtesy, Chattanooga Brazing & Welding Co.

Drum Type Dyeing Machine.

### Ethylene Dichloride.

Ethylene dichloride belongs to a group of new solvents that are finding use in the textile industry. It has the characteristic odor of chloroform and preparations having this odor may as a rule be assumed to contain ethylene dichloride. It has excellent solvent properties for oils, fats, and waxes; and this coupled with a comparatively high boiling point (182 degrees F.) recommends its use in wet finishing compounds. Fortunately, this solvent combines easily with soluble oils and soaps to make stable compounds which show to a fair extent the desirable solvent and cleansing properties of the dichloride. One of the best of the ethylene dichloride mixes contains sulphonated red oil soap in combination with the solvent. This and similar preparations may be generally recommended for boiling out cotton and other fibers containing natural waxes and for cleaning goods stained with oil or grease. Ethylene dichloride has been recommended as a direct spotting agent for removing tar, paint, and brand marks. With ethylene dichloride and other chlorinated hydrocarbons, ordinary precautions against heavy breathing of the fumes should be taken; these solvents are mildly intoxicating.

Scene in Practical Mill Laboratory.

### Dichlorethyl Ether.

Dichlorethyl ether is another of the newcomers in the field of textile solvents. It possesses desirable properties but its use is not very extensive. Its boiling point (352 degrees F.) is considerable above that of water, and it has a good degree of efficiency as a penetrant and wetting agent in soluble form. Dichlorethyl ether, like ethylene dichloride, is a solvent for fats and waxes and is also a good spotting agent used directly; in fact, the two chemicals are not all unlike in their solvent properties. With its higher boiling point and less pronounced odor, the ether may eventually replace the dichloride in penetrant compounds, though it is perhaps not quite as efficient a grease solvent. The ether lends itself easily to compounding with soap and soluble oil. It has been used, incorporated with sulphonated castor oil, as a scouring agent for Monel metal dye machines. A good fifty per cent sulphonated oil will carry about 25 per cent of either the dichloride or the ether. Both of these solvents are in themselves water insoluble.

(This completes the listing of the solvents most commonly used in wet finishing compounds. In the second installment of this article, to appear in an early issue, some of the other solvents met with, such as carbon tetrachloride, tetralin, trichlorethylene, are discussed. There will also be a general summary and a discussion on the manufacture and the practical application of these agents.)

# Carding and Spinning Discussions Held by Georgia Men in Atlanta

## Reported by Robert W. Philip

**ONCE again the Georgia operating executives meet, and hold a helpful discussion. As usual, a number of new topics were brought up in this meeting and experiences on them given.**

**High density cotton, ageing cotton, moisture content of picker laps, beater settings, dressing for leather rolls, cleaning spinning, and cork rolls are among the subjects covered in this report . . . . . .**

CARDING and spinning questions of an interesting and timely nature were discussed at the semi-annual meeting of the Textile Operating Executives of Georgia, which was held at the Georgia School of Technology, Atlanta, on Friday, March 18th. The attendance of mill men and visitors was representative, and some constructive ideas were brought out in the discussions.

E. H. Rogers, agent, Fulton Bag & Cotton Mills, Atlanta, presided at the meeting as general chairman of the organization. Frank K. Petrea of Columbus offered the invocation. Arthur E. Massey, superintendent, Exposition Cotton Mills, Atlanta, conducted the carding discussion, which was held at the morning session, and John R. Federline, Jr., overseer of spinning, Lanett Mill, West Point, was in charge of the spinning session in the afternoon. J. C. Edwards, superintendent, Martha Mill, Thomaston, Ga., was made a member of the executive committee for a term of 2½ years, succeeding George W. Murphy, Columbus (Ga.) Mfg. Co., whose term expired at this meeting. In the drawing for the hat awarded at each meeting, L. B. Colbert, overseer of carding, The Trion (Ga.) Co., was the lucky recipient.

### Captain Meikleham Speaks.

A new and interesting feature in the program of this association which was introduced this year was an informal talk by Captain Harry P. Meikleham, agent, Pepperell Mfg. Co., Lindale, who spoke in his characteristic way, addressing his remarks largely to the overseers, and discussing them and their responsibilities. On this subject, he said in part:

"When you come right down to the plain facts, the important man in operating a cotton mill is the overseer. If you have not got the right type of overseer, it is just too bad for the mill. A good president, a good treasurer, a good superintendent, cannot get results unless the overseer gives it to them.

"An overseer should realize that he is an important cog in the machine, and that he has a very difficult and responsible position; that he is absolutely in between the mill management, which is responsible to the directors, and the employees. A good overseer is going to realize his responsibility to the directors through the management. He is also going to realize his responsibilty to the employees. He has got to treat them both fair; he cannot lean towards the employees in favor of the management, and he cannot lean towards the management in favor of the employees.

"I think it is a mistake for a mill to employ an overseer, put him in this responsible position, and then handcuff him. For the superintendent to tell him he has got to do this, he has got to do that; he has got to use this, he has got to use that. If you have got judgment to pick a man as overseer, if you think he is the man you want, that man should be left absolutely alone. A superintendent that is all the time pushing his views and his ideas and his wishes onto an overseer, is not working for the best interests of the corporation, and is not giving the overseer a square deal."

Captain Meikleham concluded his remarks with this advice to overseers, equally applicable to others:

"Be real men. Be straight and clean. Treat your employees fairly. If there is any one thing that will make loyal employees of your people, it is treating them fairly and squarely, no matter whether you are giving credit or soaking them. You can fire a man and do it in a fair way.

"Treat your superintendent fairly. Lay your cards on the table. If you have made a bust, tell him you have made a bust. There's not a man who is worth being shot, who has not made a lot of mistakes, honest mistakes.

"Don't think you know it all. Don't think you are a world beater. Give credit where credit is due. Get all the information on a subject you can, and then use your best judgment. You can get lots of good advice from people who know a whole lot more than you know. Treat your help fairly. Lay your cards on the table. Work every minute of your time for your corporation. I don't mean by that that you have got to be in the mill every minute of the time, but when you are working for a corporation, they are entitled to all of your time.

"Don't do anything that will bring any discredit on your corporation. You have the good name of your corporation in your hands, absolutely. Be careful of that, and keep clean, and don't be worrying about what the other fellow is doing. Conditions are different—I can do things in my mill that possibly you cannot do in yours—but do this: get the very best work you can out of your equipment. Get the cost down as low as you possibly can, realizing your duty to your employees and to our corporation.

"Don't worry about what the other fellow is doing. Get your work done right, and you will be recognized.

Some people are so afraid that, unless they blow their own horns, other people won't know they are alive, but, if you are a high class man, doing high class work, doing it honestly and cleanly and well, and you have got the ability, and you have made the most of your ability, you will stand out."

### Accepting and Handling High-Density Cotton.

The practical discussion was opened by Mr. Massey with the question, "Is high density packed American cotton recognized as a commercial package, and is it generally accepted by the mills? (b) Where mills use both high density and regular compressed or both, what methods are used for opening cotton?"

The reply of Oscar D. Grimes, general manager, Athens (Ga.) Mfg. Co., to this question, which had been submitted to him, was read, as follows:

"We have purchased 75 bales of high density packed American cotton which was shipped to us from New Orleans. This cotton was prepared for export, as the cubicle dimensions of high density packed cotton are less than those of ordinary compressed cotton. This makes the cargo rate on high density packed cotton lower per pound than on compressed cotton, as the cubicle dimensions are considered as well as the weight of export shipments.

"We do not believe high density packed cotton is generally offered to American mills as it has never been offered to us except in this one instance. We do not believe high density packed cotton is generally accepted by the mills of America.

"In using ordinary compressed cotton the bales are opened in the ordinary way which is to remove the ties and lay the bale on the floor, and then remove the bagging from one side, which leaves the fiber on one side of the bale exposed so that the opening room man can feed the cotton to the bale breaker or other machines which may be in the opening room. It is advisable, if sufficient floor space is available, to remove all the ties from the bale except the ones at each end and allow the bale to expand for 24 hours before feeding it to the machines; however, we do not follow the last method but feed the cotton to the machines almost immediately after the ties and bagging are removed.

"We have used considerable Egyptian cotton which is shipped to this country in high density packed bales. We have always allowed these bales at least 24 hours in which to expand after the ties are removed and before the cotton is fed to any machine. We find high density packed cotton to be very difficult to handle, in that the bales are small and very heavy, which makes it difficult for the men to move the bales around. High density packed bales are very hard to make the hooks on the cotton scales take hold of the bales for weighing. We have not found the staple of high density packed bales injured in any way, but the machinery will process high density packed cotton better after it is allowed to expand than if fed to the machine before expansion takes place. If the cotton is allowed to expand, the machines do not choke up as frequently, and, we think, clean the cotton better."

J. C. Edwards, superintendent, Martha Mill, Thomaston, Ga., was then called on, and stated that he had submitted this question in order to determine the practice of mills generally—as to whether high density cotton is being accepted on regular contract in lieu of regular compressed, and whether it was necessary or customary to specify against it in the contracts placed by mills. He expressed the opinion that shippers would continue to substitute it in increasing quantity on shipments provided the mills do not resist this practice.

"As to working this high density cotton," Mr. Edwards continued, "we work quite a bit of it, and I cannot agree with anybody who says that compressing cotton to high density does not injure the fibers; it is nothing unusual to find air pockets formed in the middle of the bale. It is subjected to 2,000 tons of pressure, and it is not uncommon to find space or air pockets inside that you could put your arm into. No one can convince me that isn't injuring the fibers.

"As for having trouble with it, if you let it open up, it will not bloom out. It's compressed too tightly. Three months ago I would have said it would, but now I know you can take a bale of high density and take off all of the ties and wrapping, and leave it that way for three months and it will retain most of its original density. It is packed so hard that the air has no opportunity to enter the bale. That is not so with the ordinary compressed bale, which is subjected to only 800 tons against 2,000 tons pressure in the high density; gin-packed bales generally are subjected to about 60 tons. It does no good to take off the ties and wrapping on high density."

"Did you have any trouble with it breaking the pins in your machines?" asked Mr. Rogers of Fulton Bag. "It wasn't so much our pins," replied Mr. Edwards. "I will state that I have had that cotton go through a No. 6 lattice opener, a No. 12 Buckley, two Centrif-Air machines, into the Buckley upstairs and still knock the bars out of the pickers. That would happen where you got some wet-packed bales, where a bale of gin or regular compressed had laid in a mudhole and then was put under high density."

"Have you tried compressed air to help open it?" asked George S. Elliott, superintendent, Pacolet Mfg. Co., New Holland. "That will do some good . . ." replied Mr. Edwards. "I think that now is the time for us to start fighting the high density bale, and I would suggest that we send an invitation to all our mills to send their cotton men to our next meeting, to discuss resisting the high density bale and to discuss means of improving the cotton bale."

As to methods of opening high density cotton, Mr. Edwards said that, "so far as I have been able to determine, the same processes in the opening room will not handle high density and regular compressed with the same efficiency. High density cotton must be put through a preliminary opening before being fed onto the regular lattice opener."

The discussion on this subject was concluded with the expression of opinion concerning the acceptance of high density bales on regular cotton contracts. Floyd B. Watson, superintendent, Griffin (Ga.) Mills, and A. E. Massey stated that their information is that the

Southern Mill Rules governing cotton transactions do not touch on high density; that under the terms of these rules, unless definite provision is made by the mill in its individual contract, that the high density is tenderable. On the other hand, it was explained, there is nothing to prevent a mill specifying in its own contract a refusal to accept high density or any other type.

### Methods of Ageing Cotton.

Mr. Massey submitted the next question: "What is the general opinion as to the benefits derived from ageing cotton on the opening room floor after all ties and bagging are taken off? Do you use the practice of cutting all but two ties in the warehouse, allowing the cotton to stand in this condition as long as possible before using? In other words, we want to bring out the methods and benefits derived in ageing and blooming cotton."

ALBERT LEHMANN, Jr., superintendent, Dixie Cotton Mills, LaGrange, Ga., elected vice general chairman, Textile Operating Executives . . .

R. J. Jennings, assistant superintendent, Lanett Mill, was asked for a reply. "We do not have adequate opening room space," said Mr. Jennings. "We do cut the middle ties and leave the cotton standing in the back of the opening room, before we use it; about 12 hours is all we allow." Answering questions, he said that his opening room is steam heated, with double steam coils in the back end where the cotton stands. He does not use ageing bins after the cotton is opened.

C. K. Cobb, assistant superintendent, Canton (Ga.) Cotton Mills, reported a similar practice of cutting the middle ties and letting the cotton stand as long as possible; not as long as desirable, on account of inadequate space. He cuts the ties in the opening room, not in the warehouse, he said, in answer to a question.

"We used to use ageing bins," reported V. J. Thompson, superintendent, Manchester (Ga.) Cotton Mills. "But now we put it in the mixing room and run it through an opener and a hopper. We got better results when we had the ageing bins."

Captain Meikleham of Lindale here described a good opening system used under the conditions of years ago in a New Hampshire mill, in which the cotton was put on planks and moved up to the openers, and taken off by hand, down through the stack, to provide a thorough mixing.

E. H. Rogers brought up the point of ageing the cotton before or after putting it through the openers. He said, "it has always been my opinion that possibly you had the same effect in one hour's ageing after opening that you would get in four hours ageing before passing it through the openers."

"I would rather have three hours ageing after it has been through the opening room than 24 hours before," agreed J. C. Edwards.

### Cleaning Staple Cotton Without Injury.

"What are the best methods and processes for cleaning staple cotton, say Strict Low Middling, without injuring the fiber?" was the next question submitted by Chairman Massey. The submitted answer of Oscar D. Grimes, read at this time, follows:

"We do not use a blade beater in processing 1¼-inch American cotton, or any other long staple cotton which we use, but do use a two-blade beater in the finisher on short staple, 1-inch cotton. We use Buckley and Kirschner beaters in our pickers, and a Centrif-Air machine and up-stroke beater of the Buckley type, in our opening room. The other machines in the opening and picker rooms are the same as those used for short staple cotton. The speed of the beater is the same as for the short staple cotton, which for us is as slow as they can be consistently operated for satisfactory cleaning. We find long staple cotton harder to clean than short staple cotton, but do not think there is a vast difference in running long staple cotton and short staple."

"We handle it just about like Mr. Grimes does," said J. C. Edwards. "It is harder to clean, and it certainly does require different processing."

"I think it would be a mistake to have high beater speeds on staple cotton," reported F. B. Watson of Griffin, "as it would injure the fiber. We do not have any blade beaters. We have two Buckley upstrokes, a vertical opener, and a Kirschner, all on slow speed."

### Difference in Moisture in Laps on Wet and Dry Days.

"What is the variation in moisture content of your finisher picker laps on wet days compared to dry days?" was the next question, which had been submitted to several members. The reports were surprising in showing consistently a better control of laps on wet days than in dry weather. The first report was from John Klinck, superintendent, Sibley Mfg. Co., Augusta, his figures being submitted by Walter Dillard, Jr., assistant superintendent, as follows:

"This record is based on tests run for 30 days, and covers ⅓ wet days and ⅔ dry days, with one day of light snow included in the wet days. On wet days our moisture content in laps showed a variation from 6.4 to 7.1 per cent, and on dry days we had a moisture content variation from 5.4 to 8.4 per cent."

Frank H. Cooper, assistant superintendent, Fulton Bag & Cotton Mills, was called upon, and said he had made a number of tests on moisture content of picker laps. First, however, he explained that "we have no air discharge from our pickers. We have recirculating pickers, and automatically controlled humidity and automatically controlled heat in the picker room, and keep a constant temperature and regain there. The results of 50-odd tests show that we have an average of ½ of 1 per cent variation in our laps from the wettest days to the driest days. One test,

made on one day when the humidity outside was 37 per cent and then when it was 81 per cent, showed a variation of .46 per cent in the lap moisture content. The biggest variation in the 50-odd tests was .56 of one per cent."

Henry Robinson, assistant superintendent, Columbus (Ga.) Mfg. Co., with customary pickers, reported a less variation in picker lap moisture content on cloudy, rainy days than on dry days.

George S. Elliott said, "Our tests show one per cent variation on dry days, and ¾ per cent on wet days."

### Beater Settings and Types of Beaters.

The next question asked, "On a one-process picker, with Middling cotton, what is the best setting on the 3-blade, 2-blade and Kirschner beater?" No direct answers were given to this question in all details, though some figures as to beater settings generally were furnished. It was pointed out that so much depends upon the amount of stock fed, class of cotton, etc. On ⅞ to 15/16-inch cotton, the following settings were suggested: blade, ⅜-inch; Buckley, ⅜-inch; Kirschner, 5/32-inch. Under this discussion, however, David Clark, of Charlotte, brought out the impossibility of "setting a Kirschner beater too close". He said that at a carders' meeting 20 years ago a carder made the statement that, "it is impossible to set a Kirschner beater too close", and that many disagreed, but found through later tests that the closest possible setting of this type of beater did not injure the cotton and produced the best results. L. J. Duckett, overseer carding, Fulton Bag & Cotton Mills, confirmed this by saying that, "I find when we set the Kirschner as close as possible that it will make a smoother lap that looks better. We have lately set them up just as close as we can get them". D. R. Senn, superintendent, Enterprise Mfg. Co., Augusta, said he sets a two-blade beater to ⅛-inch, and the Kirschner as close as possible, and "we are entirely satisfied and get a much better lap."

### Experiences with Metallic Card Clothing.

"Will metallic card clothing crystallize upon running, and get brittle?" was the next question, which referred to the newer type of card clothing which is applied to the cylinder and doffer in a manner similar to that used in applying licker-in covering.

J. E. Batson, overseer of carding, Columbus (Ga.) Mfg. Co., reported that "we have 23 cards equipped with this clothing, and have had it on from two to three years, and there is no indication of crystallization."

R. J. Jennings answered the question by saying that he does not have but one card so equipped, and that he has had this a little over a year, with no sign of crystallization.

George Glenn, overseer of carding, Pepperell Mfg. Co., Lindale, was next called upon, and said they only have one card, and that they have no trouble with crystallizing, but "the trouble we had was when it was first put on they did not put it on smooth enough, and it had to be ground quite a number of times; since then we get a good setting."

C. K. Cobb, of Canton, said that while no crystallization had shown up on the two cards he had equipped with this clothing, he did have trouble with the cloting in the case of a choke-up on the doffer. He said when they took the choke out there was a little wad of cotton between the doffer and the plate, which had pushed the plate into the cylinder, causing it to strip off about two to four inches of the wire, the teeth breaking off and leaving the foundation. "I don't know whether that is the fault of the clothing, but this has happened three different times." He said in answer to a question that he did not think that heat could have caused this, as the plate was pushed into the cylinder fillet, causing the rupture.

### Decrease in Flyings Because of Better Cotton Crop?

The next question read by Mr. Massey was: "Due to the fact that this year's cotton crop is better, are you setting your cards to take out as little waste as possible, that is, flyings, strips, etc.? If so, have you noticed an increase in shedding, invisible loss, sweeps, slubs, gouts, etc.?"

J. C. Platt, agent, Aragon (Ga.) Mills, reported that "we have noticed a decrease in our waste, but we haven't set the cards to decrease it. We have less flyings around the mill, but that is something we cannot check up on as to whether it was the cotton, because we have started spraying our cotton with oil, and we cannot attribute the improvement accurately to any change in the cotton. We have also had a decrease in the invisible waste."

"We have changed our settings on some of our cards, where we do not use the strips back again," said E. H. Rogers. "I should think that whether you are using or selling your strips would largely govern it," said A. E. Massey.

"We do not find any decrease in slubs and gouts, due to the quality of cotton we are using," continued Mr. Rogers, "but we have had a considerable decrease in them due to the efforts of the overseers and their co-laborers."

Frank K. Petrea, superintendent, Swift Mfg. Co., Columbus, Ga., asked whether anyone else had had the experience, in view of the unusually dry cotton season, of finding more of the small ends of seed clinging to the fiber, having been pulled off with the cotton in picking. V. J. Thompson reported he has run into more or less of this difficulty at his plant; Mr. Elliott said he finds less than prevailed with the cotton of the previous crop.

"In some classes of work that we dye in light shades," said Mr. Petrea, "these fine particles adhere to the fibers and do not dye with the cotton, and these undyed specks show up in the cloth." Mr. Rogers reported that he had had a similar experience in a previous connection with a colored goods mill.

### Double or Two-Process Drawing Preferred.

The next question asked, "Is single process drawing better than double? Is seven ends up on drawing better than six? If drawing is running double at 240 r.p.m., and you decided to change to single, what would be the best speed?" No one present advocated single process drawing in this discussion. J. L.

Bowles, overseer of carding, Fairfax Mill, said they had tried single process, but that it did not straighten all of the fibers, so they went back to double. "It depends on what you want to get," said V. J. Thompson. "If you want uniformity you can get more doublings and better results with two processes, and a little better break the other way with single at slow speed. The work runs better in the spinning room when using double drawing. We have gone back to double." When he went onto single process, he said his double drawing had been running 450 r.p.m., and that this was cut to 217 r.p.m.; that while there is undoubtedly a minimum limitation as to speed, it should not hurt to cut double drawing running 240 r.p.m. to 125 r.p.m. in going to single process.

D. R. Senn said he had submitted the question, because he is running double drawing at 240 r.p.m., and that at a previous meeting, two men had said they would fire an overseer who wouldn't run single drawing, but that he has not been able to accomplish as satisfactory results with one process. A. E. Massey told of an experience in a previous connection where a customer demanded 8 ends up at the drawing, with a draft of 7½. No one present indicated a present practice of using more than the conventional six ends up at drawing, though Mr. Rogers said that previously he had run eight ends on one head of self-regulating or evener drawing; keeping the product of this equipment separate through to the spinning, and being unable to find any gain.

### Turning Worn Slubber Spindles Down for Intermediates.

"Can old worn slubber spindles be turned or ground down for intermediates, making a satisfactory job?" was the next question read by Mr. Massey.

"We have always had them reversed, and then thrown them away when they wore out the second time," replied Mr. Rogers, "but after trying to get them turned down for intermediates we finally found a man who could do us a first-class job, and to all appearances the spindles that have been reduced are as good as new."

J. M. Glass, overseer of carding, Shawmut Mill, said, "I have mine re-topped. We have had a lot of experience with reversing spindles, and some of it hasn't been satisfactory. I think it might be done, if done properly, but you must check very carefully to see that the spindles are made the same size down near the bottom." "About this grinding down, I have not tried it, but you wouldn't want to do that unless you had some slubber spindles that were ready to be thrown away. If your slubber spindles are worn out it would seem to be a very good practice to have them ground down for intermediate spindles if a satisfactory job could be secured," said J. C. Platt.

"We changed two frames, but were not able to get the right shape of top," said George S. Elliott. "They were very loose. If the job could be done mechanically right it should be a good idea."

### Dressing for Leather Top Rolls.

The final question prepared for the carding discussion was, "Have you experimented with any dressing for leather rollers to add to their life and to improve the running of the work?" It developed that a number of years ago, this practice had been tried with unsatisfactory results, but that more recently interest has been re-awakened in its possibilities with different materials. "We have not experimented a great deal," said J. C. Platt, "but we are trying out a dressing which the manufacturers claim will prolong the life of the rollers 25 per cent. The spinners seem to be well impressed with it. If we could get a dressing that would last a good while and do what this manufacturer says this will, it would be a good thing." It was stated that a good test would be to use the dressing on the cot on one side of double-boss rolls and leave the other untreated for comparison under identical conditions.

G. E. Maddox, overseer of carding, Fulton Bag & Cotton Mills, next reported, stating that he uses a dressing which he applies every other week. "The only difference I can see is that it makes the roll slick, and it doesn't pick up the little foreign stuff as it usually does. I believe it runs better and I believe the rolls last longer. There is no decrease in the fly or top clearer waste."

"We feel that there is a good deal to be accomplished along this line," said Mr. Elliott. "If you get a dressing that will stay on long enough it will be a great thing. We use a liquid preservative, and we find that it decreases the eye-brows considerably, and improves the work and prolongs the life of the rolls." Mr. Jordan, carder at Swift Mfg. Co., said he had tried a preservative several years ago with unsatisfactory results. O. C. Bagley, Dixie Cotton Mills, said his experience had been unsatisfactory; that he put some in a drawer where they had been troubled with mice, and that the rodents promptly departed, "and I figured if the rats wouldn't use it, I wouldn't." Mr. Massey suggested the possibility of an advantage in treating the skins before applying them to the cot, and it was suggested that experiments be made along this line.

The carding discussion was concluded in answering an inquiry from Frank E. Heymer, who wanted opinions as to whether, in closing down a mill, the cards should be run out clean or whether strips should be left in them. It was unanimously agreed that it was much better protection to leave cotton in the card and on the flats during a shut-down. This will prevent the wire from rusting.

Before lunch, General Chairman Rogers called upon David Clark, of Charlotte, N. C., for a brief talk, and Walter C. Taylor, secretary of the Southern Textile Association, and Theodore M. Forbes, secretary of the Cotton Mfgrs. Ass'n. of Georgia, also spoke.

### J. C. Edwards Added to Executive Committee.

The usual "Dutch" luncheon was held at 1:00 o'clock in the Tech mess hall. The only business transacted was the election of J. C. Edwards, superintendent, Martha Mills, Thomaston, as a member of the executive committee for two and a half years, succeeding George W. Murphy, superintendent, Columbus (Ga.) Mfg. Co., whose term expired at this meeting.

After luncheon, the afternoon session was devoted

to discussion of a questionnaire on spinning problems. This spinning discussion was ably led by John R. Federline, Jr., overseer of spinning, Lanett Mill. The first spinning question was, "(a) Why does it take a heavier traveler for a worn ring than for a new one? Three or four days running will slick up a ring sufficient to establish a definite number for a certain speed and yarn number, but sometimes this number will have to be heavied on every few months until the traveler is several numbers heavier than the one started with. (b) Is it better to run square point or round point travelers on warp? On filling? Coarse numbers? Fine numbers?"

### Causes of Changing Traveler Weight.

C. K. Cobb of Canton explained he had asked this question, because, "we started up on some heavy warp yarn, 8s, with a No. 11 traveler. After a month we had to heavy a little at a time until a few weeks ago, and found we were running a No. 18 traveler, same yarn, same speed, and changing the twist only for the traveler. I asked that question to find out why it is after a ring wears that a heavy traveler is gradually necessary. T he only remedy we found was to turn the rings over, and we went back to the No. 11 traveler about three weeks ago." Mr. Cobb answered questions from the chairman by saying that the change was a gradual one, every few months, and covered a period of six years. As to round and square point travelers, Mr. Cobb said he prefers the square point on coarse numbers, both warp wind and filling wind on warp, and on filling, as it does not seem to unthread itself as readily as the round point type.

Walter Dillard, Jr., presented the reply of John Klinck to this question:

"This question is one largely of preference. The main factor or function of a traveler is to lay the yarn on the bobbin or quill. The new ring requires a lighter traveler due to roughness of the ring, and lack of a traveler race in the ring. After a track has been worn into the ring, you can heavy the number of traveler on the yarn; this is done gradually from month to month until the work is running properly.

"We prefer square point travelers on our numbers, which run from 7s to 24s, white and colored stock. We feel that they do not wear the ring out so quickly as round point; we think we can run heavier travelers on our numbers with the square point."

"I find that running a square point it lays the yarn more smoothly on the bobbin," said W. J. Jordan, spinner at Swift Mfg. Co. "When you stop the frame, the round point unthreads itself, on both filling and warp, and if you put a round point on, in 24 hours it will have a square point. I turned over some rings on 14 warp frames and polished them, using just a little cocoanut oil, and put on the same traveler that I had been using, and it worked fine."

E. H. Rogers asked where the wear occurs on a square point traveler. Mr. Jordan replied that the only place he had ever noticed was where the yarn runs through.

"Three or four days is not sufficient time for a traveler to polish a new ring or get set to the ring," declared A. B. Peterson, overseer of spinning, Pacolet Mfg. Co. "Three or four months would be much better. I have never seen a new ring with a polish on it equal to the polish that a traveler will put on it. My experience has been that you will have to put on a heavier traveler from time to time until the ring has been in use for five or six years.

"As for square point and round point, we use the square point. We find it gives better service on our numbers, 6s to 25s. In fact, with a round point, when you draw the traverse down to doff, you have a lot of ends unthreaded, and the round point is worse about breaking off. On coarse numbers up to 25s, I prefer the square point."

JOHN R. FEDERLINE, Jr., overseer spinning, Lanett Mill, who led the spinning discussion

John Hampton, overseer of spinning, Fairfax Mill, said he had never gone to the extremes indicated by Mr. Cobb in change of traveler number; in fact, he said, with rings being made so much better at present, he has started up new rings with the same number of traveler and gone right ahead with it, as a result of the improved rings now available. "On warp wind, as your frame builds up, your traveler will get lighter," he said, "and it will set to a certain position on the ring, and if it wears a race in that ring you can heavy up some. But sometimes you have to heavy travelers with a difference in your cotton. You can run a heavier traveler on good staple cotton than on short staple, and sometimes you get in a mix where you have to lighten up on the traveler a little and yet the yarn will not be light.

"I have never had any experience with round point travelers. I always run as small a circle a traveler as I can get to run satisfactorily. It gives less trouble with flying off; the travelers will last longer and will not become unthreaded at the doff."

Chairman Federline gave it as his preference to run square point travelers on all numbers up to 30s, and round point on warp and filling above 30s. He said, however, that he would do this "provided the rings had been started up on the respective style of traveler"; in other words, if he went on a job where the rings had been started on either style of traveler, he would stick to that style for those rings, regardless of his preference in the matter, until rings were changed.

Webb Durham, of the Whitinsville Spinning Ring Co., was called upon, and declared that Walter Dillard had about summed the matter up; that it does take the traveler some time to wear its race, and in a great many cases that race is worn on the outside as well

as on the inside of the ring; and once the traveler has worn its track to get its equilibrium, the friction is eliminated. He pointed out further that when the inside of the ring is worn into a race, the ring becomes worn wavily and the traveler will not make a uniform contact.

### The New Curved Web Ring.

Mr. Rogers asked that Mr. Durham describe the "new style ring with a curved web between the lower and upper flanges", asking if it had an effect on the style of traveler used, or the size of traveler. Mr. Durham requested that W. A. Scott, overseer of spinning, Anchor Duck Mills, answer on the basis of his experience. Mr. Scott has had two frames of this type of ring for about 12 months, and said "I put on the same traveler that I ran on the old style ring, and I find that this new ring is a great improvement. I have found no worn places, and the traveler does not cut a groove in it as it does with the old style ring." He answered a question from Mr. Rogers by saying that on the old style ring, the groove cut was mostly on the inside.

J. C. Platt of Aragon Mills added that, "we had the same experience on the customary style ring with the cutting of the web on the outside, and our traveler men and others came and looked it over and no one seemed to be able to tell just what was causing it. This was a deep groove on the outside of the web, every 120 degrees of the circle. The only thing we could do to stop it was getting these curved web rings, and the traveler doesn't reach over far enough to touch the web on these rings. We have been running them about a year and see no signs of cutting."

Mr. Elliott asked if this type of ring permitted a longer traveler life. Mr. Neall, Aragon's overseer of spinning, said they had not determined this, inasmuch as it is their practice to change their travelers regularly, regardless of whether they are worn out or not. Mr. Scott reported that he also changes travelers regularly, but that at the time of changing the travelers on the new rings do not appear to be as worn as those on the old style rings. He changes travelers every 15 days.

Julian M. Longley, assistant superintendent, The Dixie Cotton Mills, LaGrange, said they have one of the new style rings on a warp twister, and had run a traveler on it for six months, day and night; and that this had not burned the ring.

Mr. Rogers asked Mr. Platt "what happens when the rings rust?" Mr. Platt described his method of polishing rings. He said, "When we put in a new frame of rings, all of the old rings are picked over and the best ones selected and these are put in a holder and placed on a spinning spindle we have on a spooler, running at a high rate of speed. Our Mr. Neall worked out this system, and it is very good. He uses oil and graphite and pumice stone. All of the rings that we turn over we put through this process. I believe he can start up these rings with practically the same traveler used before turning.

"Both the outside and inside of the web and ring are polished. A man dips a piece of fine emery in the oil and graphite and pumice stone and holds it against both sides of the ring while it is on this spindle."

"Would it not be as well to cut the spindle speed on the spinning frame and put on a heavier traveler and change oftener and let the traveler polish them?" asked the chairman. Mr. Platt said he preferred the way he explained.

### Dressing for Leather Spinning Rolls.

Chairman Federline then asked the spinners to discuss the subject of treating leather rolls with dressing to preserve them and prolong their life. John Hampton said he had tried a roll treatment some eight or ten years ago, and could get no improvement; he expressed the opinion that when the cushion of a roll is gone, it's of no use, and that any kind of treatment will not restore or replace the lost cushion. Mr. Platt read an expression from a roller skin man, indicating that his roller dressing will increase the useful life of the roll about 25 per cent. The letter explained further that the processes involved in roller covering removes a percentage of the leather's natural life, and that something should be done to restore the leather in some degree. "Believe it or not, but a roller coverer takes away one-fourth the normal life of a roll before it enters the frame," it was stated. "This solution treats the fibers and leaves the grain hard and smooth with a lessened tendency to rough up." Mr. Elliott brought out that practically everyone treats leather belts, and that the same principle, if the proper dressing be found, should be applicable to leather drafting rolls.

A. B. Peterson reported that he is doing some experimenting. "As to increasing the life of the roll I am not able to say at this time, but while I am up I would like to spring another question: Do any of you spinners have any trouble with 'eye-brows' on the top clearer boards? If you have, this liquid preservative that we are putting on the roll will certainly stop that, but as to how long it will stay on I am unable to say; but I do know that it pulls that foreign matter back in under the clearer board where it belongs."

Mr. Rogers asked about the effect of the roll treatment on the running of the work. "I have not made any tests, and cannot say," replied Mr. Peterson. "From off-hand observation it seems to improve it just a little."

Replying to a question from D. R. Dickson, Mr. Peterson said no eye-brows are formed at the back or behind the clearer board, that the waste is taken to the proper place under the board. Mr. Dickson then brought up the possibility of the cot leather stretching after the treatment; pointing out that leather belts stretch.

Mr. Elliott brought out that "if you treat them before you put the roll in, you press the cots on tight if this is on there to protect them. It is like a piece of live leather."

"We have just started experimenting with various kinds of dressing," reported Mr. Rogers. "In some cases we have greatly reduced the ends down. I am not prepared to say how long the dressing will stay on or whether it increases the life of the roll or anything of that sort, but I believe that in some cases you

will get a prolonged life and certainly better running work."

Mr. Peterson explained that "we treat our rolls in the roller room. The rolls to be used tomorrow are treated this afternoon and stand overnight and then run through our roller machine tomorrow morning and then they go to the spinning frame."

In answer to a question from Chairman Federline, it appeared that no one present, except Mr. Massey, of Exposition, uses humidifiers in the roller shop. W. C. Hames, of Edward H. Best & Co., pointed out that "you can stretch the cot on tighter without injuring the grain of the skin where you have humidity in the roller shop. All cots should be conditioned before they are drawn on."

### Checking on Doffers and Spoolers.

Mr. Federline next asked, "What is the best method for checking up on doffers and spoolers, where you pay by the doff, and by the box?" The answer of John Klinck, presented by Walter Dillard, seemed to present the consensus of opinion: "In checking up on doffers and spoolers where paying by the doff and box, as against hank clocks, we use the following method: In our mill all piece employees have a daily work card, showing operation, units, etc. On our doffer and spooler cards we have printed a series of numbers running from 1 to 60. As each doffer makes his rounds he takes his card to the section man on whose section he is doffing, who has a punch, and he punches the number of boxes doffed. In like manner the yarn man in the spooler room punches the spoolers' cards when he pours up a box or doff of yarn. Weekly the overseer and superintendent are furnished a production report based on these cards, which shows the amount of pounds doffed and the amount of pounds spooled. Everyone connected with these operations knows this is checked, and since we have been running this system we have not encountered any trouble. This works out extremely well in our particular plant." This referred of course to warp, and Mr. Dillard asked for suggestions as to a method for checking on filling, declaring that their method is to use a head doffer, but that they have no way of checking the amount of pounds spun against the amount of doffs paid for.

Mr. Peterson said, "we have the punch system both on doffers and spooler hands; paying by the frame on doffing and by the box on spooling. From time to time we count the bobbins in the spooler room boxes, and we check them occasionally from the production. This is all weighed on the scales. The warp production is correct, and the closest we can get to the filling is from the figured production. We do not weigh the filling at all. We do not have a good system on checking filling doffs, but we can check the warp pretty closely."

Answering Mr. Federline, several running cone winders instead of spoolers stated that they pay by the cone on winding; several with the Barber-Colman automatic spooler pay by the cheese.

### What is "Good Running Spinning"?

"How many spindles can a good spinner run if the end breakage is 37 per 1,000 spindles per hour? State yarn number, etc." This was the next question.

John Hampton reported that his breakage figures about 40 per thousand spindles per hour, and that on 6.75s to 30s, his spinners handle 16 sides; 208 and 216 spindles to the frame. He said his roving bobbins run anywhere from 18 to 62 hours. The end breakage on the 30s is higher proportionately, he said, but he has his spinning so laid out that each spinner has one frame of coarse work, so they all run the same number of sides. He said they have special hands for cleaning.

"I think the answer to this depends quite a bit on the cleaning the spinner has to do," said Mr. Peterson. "If the spinner has to do all of the cleaning, 1,100 to 1,200 spindles would be about all one spinner could handle, on coarse numbers, 10s to 20s."

Mr. Federline reported a test with spinners running eight sides, doing their own cleaning, with 45 ends down per thousand spindles per hour. The roving package, he said, ran 10 hours, and each spinner creeled in 980 bobbins. He said the test showed that 20 per cent of the spinners' time was taken up by creeling roving, 20 per cent by putting up ends, and 60 per cent in cleaning, with 20 minutes lost time in ten hours.

Mr. Rogers asked if that meant they could handle 20 sides if someone else did the cleaning. Mr. Federline explained that the test showed that 15.8 per cent of the time was taken up in walking and that the element of floor space to be covered would have to be taken into consideration. Mr. Hampton also pointed this out, and also brought out the fact that a great deal of time is consumed by a spinner in going from one end down to another at the other end of her set of frames, if his rule of not allowing an end to stay down is followed.

**TWO subjects in particular among those developed at the Georgia meeting reported here warrant further investigation, and our readers are urged to investigate them and report to our "How Other Men Manage" department the results of their experience.**

**One of these is the subject of a dressing for leather top rolls, to prolong the life of the rolls and improve the running of the work.**

**The other is the proposal of turning down worn slubber spindles for intermediates. Readers are urged to experiment along these lines, and report their findings in letters to the discussion department . . . . . .**

### Methods of Cleaning Spinning Frames.

"What is the best method for cleaning spinning—to fan off every hour or clean by hand and pay the extra cost?" was next submitted for discussion by Mr. Federline.

"We are not allowed to fan off," said John Hampton of Fairfax. He said they use the air hose once a week, stopping off three frames at a time, the one being cleaned and the one on either side of it. "On coarse work we do not allow them to brush off; we

rub off with a rag," he added.

"We fan off every hour," said D. R. Senn, "but we don't approve of it." He explained that he had submitted the question, and that, since they do not employ females in the mill at night, he is forced to use men spinners, and that somehow or another they cannot clean as well as the women—their fingers and hands are too large, or something—and they resorted to the fanning method not as a matter of choice; and that since fanning is done on the night shift it is also carried out in the day time. He reported no extra trouble from gouts, by fanning, on 6s to 24s.

"Does that increase the cost at spooling, or cut the spoolers' pay?" asked Mr. Peterson. Mr. Senn replied that they use cone winders instead of spoolers, and that the high speed warper hands on the day shift do have a harder time starting up on the night winders' yarn for an hour or so in the mornings. He said his experience is that men do not make as satisfactory winder hands as women; that on his day shift he has women winder hands taking care of 50 spindles at 520 yards per minute, whereas between 10 and 20 spindles is the best he can do with the men at night.

"Spinning at night is a hard job," said Mr. Hampton, "but we find it easier to make good clean-off hands than good spinners out of men." Mr. Edwards suggested that using the overhead cleaner system would be a boon in taking a great deal off of the men spinning at night. Mr. Federline asked for experiences from those mills using compressed air for cleaning.

"We clean with air between shifts," said Mr. Dillard. "We run day and night, and that gives us three hours between shifts. We send out the oilers who do the cleaning so that they do not make but the proper number of working hours, and they come in between shifts and work through the noon hour." He said they stop the machinery while cleaning with air.

Mr. Bagley said that at Dixie they only clean spindles at night, and pick separators when the frames are stopped.

"A fool and an air pipe make an unbeatable combination," declared J. C. Edwards, in urging that this work be given only to conscientious and dependable operatives. He declared their arrangement is such that a 60-foot air line reaches any part of the mill, ceiling or frame. "We blow off every 2½ hours, for the purpose of getting there before we have a large accumulation. We have no between-shifts, and no noon-hour (running three eight-hour shifts), and we do not stop the frames." He said under this plan one cleaner takes care of 60 frames.

"Our section men blow off once a day while the machinery is running," said Mr. Scott, "setting the spooler guides to catch slubs." He said on 17s they set to a 22/1000 card gauge, and on 12s, to a 10/1000 gauge. Mr. Dillard uses a 22/1000 on 7s; and Mr. Hampton a 17/1000 on 15.25s and a 12/1000 on 30s.

Mr. Federline summed up his opinion on cleaning methods as follows: "For quality yarn, clean by hand; for low cost and production, clean by air."

Mr. Federline next submitted this question: "What has been the result in the spinning department where an automatic roving tester is used in the card room?"

### Automatic Roving Tester.

George Glenn, overseer of carding, Pepperell Mfg. Co.. said, "We have only had ours for a few months and we consider it in the experimental stage. We are taking a record of the frames and our idea is that our roving tester might help us in getting them all alike." George Elliott said, "there are so many things it doesn't show up. You can take an imperfect yarn with plenty of twist and it makes a beautiful line; and we have not been able to apply the recommended weights to the roving. I guess a person who didn't have very much to do could play with it and get some information.

### Causes of Roll Leather Splitting.

"What causes the outside or hair side of sheepskin rolls to come loose from the meat side, sometimes, after running a short time?" was next asked by Chairman Federline. Mr. Hampton expressed the opinion that this could be caused by oil getting on the roll and working into the leather.

J. C. Platt read an opinion from a roll leather concern pointing out that this is frequently caused by excessive liming in the treatment of the raw leather and in the de-hairing operation. "This fault," he read, "must be laid at the door of the packers. There is nothing a tanner can do to cause this separation, and little he can do to overcome it."

J. B. Kennington, a roll coverer, was called upon for an opinion, and said that the splitting of leather is caused principally from the raw material, and the source from which it comes. He said that if leather is from good native stock, domestic leather, there will be little of that trouble; but that New Zealand leather will cause a lot of it. Another man pointed out that when the skin is pressed, that too much pressure will cause the skin to separate. W. C. Hames pointed out that this trouble usually comes from decomposition in the hides, that if the liming is excessive, or is not neutralized, or if the chemicals used are not properly rinsed out, this trouble will result. In answer to a question from Mr. Elliott, Mr. Hames said this difficulty is more seldom encountered with calf-skins.

### Applicability and Size of Cork Rolls.

The last question discussed was, "If running a 15/16-inch diameter cork roll in the front line, and the breaking strength is equal to that with sheepskin rolls, what effect will it have on the breaking strength to put in a 1 1/16-inch diameter cork roll in the front line and a ⅞-inch diameter roll in the middle line?" Mr. Rogers reported that he had not had good success with the 1 1/16-inch front roll on 15/16-inch cotton; that the work did not run as well as with the smaller cork roll, and the work wasn't as smooth.

"Some time ago we sent a frame off to be covered," said Mr. Peterson, "and when they came back the rolls measured 1 1/16-inch. I put them in one side, and the rolls being that size rubbed the middle roll, so I had to spread the top rolls, opening them out just a little bit and it seemed to make the work run better. Several days later I made a pretty thorough

test, and found I got from 6 to 8 pounds better breaking strength."

Mr. Federline, who had proposed the question, said that he had fought cork rolls for three years, and that finally he had put in some of the 15/16-inch rolls with the metal cut down, and also experimented with the 1 1/16-inch roll. Then he said, he took some of his regular metal rolls covered to 1 1/16-inch with cork, with a 7/8-inch middle roll, and got better breaking strength; not having to spread the rolls. He now has 60 frames on. He said he has had some of these cork rolls in for 12 months, and that they ran 8 months without re-buffing, and that he lost only four rolls to the frame during the 12 months. He said these re-buffed rolls look like they are good for 8 to 10 months more life. He said also he had some 1-inch cork rolls, but that these being the same size as the steel rolls did not produce any flutes. On a test on sheepskin at the same time, he said, he has taken out 59 rolls from 120 in 5 months. He answered a question from Mr. Bagley by saying he did not use the same weight when he changed the size of the top rolls, and continued, "I went right on into it, with a 7/8-inch middle roll, a 15/16-inch in the back, and a 1 1/16-inch in the front, and in my tests on that found that I could see no difference in the running of the work or evenness of the yarn, and then I went back to the 7/8-inch in the back."

Mr. Scott asked about cork rolls grooving after standing at night. Mr. Federline said he had had some stand for 60 hours, and that shortly after starting up there was no appreciable effect on the breaking strength.

Mr. Heymer asked Mr. Federline specifically what his decision is for cork roll sizes on his numbers, average 14s, and Mr. Federline said he will use a 1 1/16-inch roll in front, a 7/8-inch in the middle, and either a 15/16-inch or 7/8-inch in the back line. This concluded the discussion and the meeting was adjourned. The next meeting of the organization, to discuss slashing and weaving and mechanical subjects, will be held in September in Atlanta.

# Economy in the Mill

THE TOO STRINGENT PARING of expenses begins to shape up as a costly item, when one duly considers the matter. There may be times in the cotton mill when it is advisable to curtail the monetary outlay, but there is a point beyond which this even may be exceeded. Shrewd and far-seeing executives have sensed the wisdom of maintaining the plant in A-1 condition, not only for the purpose of keeping up production to the utmost, but to effect general improvement in all departments. Further, there is a salutary and inspiring effect, when the management accords due consideration to mill's real needs, as concerns department heads, employees, customers, prospects and visitors of one kind or another.

Is the cotton mill management prone to retrench too vigorously? Or, for one reason or another, have those at the head overlooked the importance of keep-plant appearance, better plant operation, better plant progress, better plant output, better plant profits. They are then spending more money in the interest of the cotton mill, but thereby the plant will be making more money. Wise expenditures are indeed wise investments.

There is the ever-present problem of the plant's machinery, which cannot be given too much thought. The cotton mill operating with old, obsolete, deficient equipment is operating at a disadvantage. It is not an efficient plant. The mill cannot possibly function as a modern plant should, in the face of today's stiff competition. What at first would seem to be a saving stands out instead as a real loss, a deterrence to improved business. Truly, the cotton mill today cannot institute rigid curtailments of funds for improvement and expect to progress. It certainly pays to spend money wisely.

Now just how can the cotton mill effect desirable improvements? Consider the importance of machinery. How often, how rigorously, is all the equipment inspected? Who is responsible for the inspections? Who is responsible for the reports? What does the cotton mill management do in the way of meetings and conferences to discuss the possibilities of newer, modern machinery? If such meetings are held who participates therein? Do foremen, overseers etc., who know and who are close to the real machinery situation also take part? Are all permitted to advance their opinions, their ideas and suggestions? Would it not be advisable to stage such conferences periodically—say, once a month? The result after each get-together should lead to some desirable action; the object is to install such machines and other equipment as is not only necessary but also that would enable the cotton mill to make new experiments.

Thus the cotton mill would be on an assured way towards improvement and progress. The plant whose management today is not taking steps to better all departments, to effect perfection at all points so far as that is possible, is in dire danger of retrogression. It is figuratively standing still, and certainly is not making the proper headway.

Let each department head be urged to make closer examination of the different machine units, and let him also be enjoined to obtain the suggestions of different, competent employees. There is, to be sure, a veritable wealth of valuable educational nuggets in every department of the cotton mill; yet, how often is a point made to acquire some of that information? There is a woeful lack right here. It cannot be said, then, that the cotton mill is securing the possible co-operation so conveniently at its very beck and call.

More diligent inspection of the plant's equipment serves to disclose many an incipient depreciation that then can be speedily intercepted. Timely repairs can be made where necessary. Thus there are avoided sudden break-downs, too often costly in the extreme. Maintaining the cotton mill in ship-shape condition not only repays the management for whatever added time is devoted thereto; there are revealed conditions that suggest other installations, en-

abling the plant to function better. Quite apart from the importance of machinery maintenance, the subject of additional machines, better machines, is one deserving of more consideration.

Always it should be the cotton mill management's object to purchase the better sort of equipment. The course is more judicious; it is safer; it is more profitable. Uncertain, cheaper machinery is too often inferior. It does not serve the purpose. It is not what a progressive mill should have. It is inefficient. Moreover, it is decidedly costly. Does it pay to save a few dollars on the cotton mill's equipment? The management cannot give too much thought to this problem.

The same thing applies relative to materials. Consider the matter of chemicals. How often have executives been disappointed because the chemicals the plant was using did not work successfully? Experiment upon experiment; patient, expectant trial upon trial may have been made; yet all in vain. The chemicals simply did not turn out as these should have or as expected. Often, more time and more experimenting is involved than should be necessary. A question that well may be faced, in this connection, concerns the damaged and otherwise defective goods, all resulting through the use of cheaper, inferior chemicals. Indeed, does it pay to save a few cents on chemicals? Certainly the cotton mill management does well when it gives more consideration to this important problem.

You will find, upon investigation, that different department heads and different employees have much valuable information regarding this very problem of chemicals. The plant's forces are drawn from different mills; each individual represents individual, varied experience—there is a veritable cornucopia or worthwhile useful information available, right in each plant. Find out what different men think of the chemicals the mill now is using, the aim of course being to procure the best possible materials so far as possible. This intention being given impetus, it is needless to indicate that then the cotton mill is on a certain road to better headway, at least so far as regards the chemical problem.

The same procedure, of course, can be followed relative to other materials the cotton mill constantly requires. There is an opportunity ever-present in each department, for each foreman. This important work assuredly should not be confined to those at the head, nor only to the superintendent; nor, again, only to include the different department heads—competent, knowing employees should be permitted to join. The more sources that are consulted, the more productive are the plant's efforts destined to be. At the same time the cotton mill is making a wholesome impress on all those in its employ.

We must not overlook the importance of modern, efficient arrangements throughout the cotton mill. Racks, units of conveyance inside the plant, fixtures of one kind or another — all these warrant due consideration. Here again too often a few dollars may be spared, but in its interest the better, the really needed product, has not been secured, all to inevitable disadvantage and loss, monetary and otherwise.

It is well to gain a deeper insight into the real possibilities by getting the experiences and observations of other cotton mill executives relative to the matter of fixtures inside the mill. An inefficient, cheap arrangement in the end proves to be nothing more than an expensive and annoying monstrosity. Up-to-date arrangements facilitate the work in each department; there is made for a wholesome effect in the case of each worker, thus repaying the entire plant for whatever increased initial investment was entailed. It pays to spend money wisely.

It would be well to go into each department, into every corner, noting conditions, conditions that hitherto often were neglected and forgotten. Discuss the purpose of this search, and bring to light many deficient and defective conditions that long since should have been eliminated or ameliorated.

Defective flooring and other dangerous conditions that may be prevalent in a plant, may, in the stress of business, go unnoticed and unchecked. There comes the time, however, when there is a rueful awakening at the occurrence. The management in the plant had been advised by one of its department foremen regarding a dangerous hole in the floor. He counselled urgent repairing. For some reason the matter was put off and off. A few dollars may have been saved, when we look at it now, so far as the floor was concerned previous to the ensuing accident; but the decidedly negative result of the action, put an entirely different complexion to the situation. It pays, indeed, to spend money wisely, and in time.

A greater influence can be brought about, throughout the mill, and among customers and prospects, all by means of sane, sensible investment, wherever needed. The employee who is influenced by a more attractive department, by a neater-appearing mill, is sure to prove a more responsive and more efficient individual. There is a salutary effect as concerns everybody; every possible visitor to the mill. The cleaner, the better-kept mill instills interest and regard; it wins enthusiasm. This is well worth bearing in mind as concerns those at the head, too, who naturally are inspired towards greater efforts, all by reason of the better-kept mill. Spending money, timely, steadily, wherever needed, is judicious management, and promises much for the cotton mill.

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### Bulletin on Large Reliance Direct-Current Machinery.

A special bulletin describing the new large Reliance Type T direct-current motors, has been issued by the Reliance Electric & Engineering Co., Cleveland, Ohio. These motors range in size from 100 hp., 200 r.p.m., to 350 hp., 850 r.p.m. The bulletin, No. 211, includes details of construction, cross-sectional drawings, dimensions and table of rating.

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### Material for Rust-Proofing.

The Skybryte Co., 1919 East 19th St., Cleveland, Ohio, have announced the production of "Rust-tox", a protective covering for surfaces where corrosion must be combated. It is especially designed for maintenance work; in refinishing rusted machines, it is only necessary to brush off loose scale and paint with Rust-tox, it is pointed out, its sealing action preventing further rusting and preparing the surface for the paint. It is also used on new metal and in production, the company points out.

# CURRENT TOPICS

## Talk of the Month.

THROUGH the long period of economic distress and consequent resort to expediency of one sort or another, such as financial relief measures and new forms of taxation, the best that can be said for textiles is that they have been holding a relatively high position among the industries. But that is a good deal, when one recalls the erstwhile backwardness of textiles. There is hope for one lasting result of benefit to the cotton industry from the depression in the achievement in direction of balancing production to consumption. A demonstration of its benefits should be the premise to a perpetuation of the practice as a principle. This should be true the more because, as has been pointed out in many quarters, the distress of the cotton and other textile groups was not merely a reaction from the world business depression: it was a condition deeply intrenched for several years and bore the semblance of permanency. Textiles were out of joint with progress.

**The General Situation in Textile Markets.**

In the long run, therefore, the industry may look back on the depression as a not unmixed blessing, for having mitigated or even broken the curse of unregulated production. From being in the rut of unbalanced industries, textiles have taken a place in the vanguard of businesses emerging from the depression. It appears that, if the heavier industries were only going in a reasonable way, textiles would be on the highroad to a healthy status. It has been estimated recently that 40 per cent of the cotton consumed in this country goes into industrial uses, against the same volume for wearing apparel and 20 per cent for household uses. Thus it may be seen how big a stake the cotton industry has in the resumption of normal conditions by the automobile, heavy construction and other industries.

It is rather surprising that reports on textiles can show so favorably in view of the slow progress in other industries and the consequent lack of demand for cottons from that source. The trend is healthy and the agreement by nearly 90 per cent of the mills to regulation of output quickly was productive of a firmer price position which augurs well for the future of control. The sales for January, as reported by the Association of Cotton Textile Merchants of New York, were the largest since early in 1929, while stocks at the end of February showed a decrease from the January figures. (See page 52.)

As a sequence to such a combination of affairs, allied with production control, late February found the price situation one without parallel for years. Confidence prevailed among both sellers and buyers.

As usual, however, there was the minority of factors incapable of co-operating in a measure for their own and the common good. Now that constructive measures have prevailed in production, the next step is to promote them in price-making. It is significant that buyers found unrestricted production in the final analysis inimical to their interests as well as that of manufacturers. A line of propaganda now is needed—as much as it should not be—to demonstrate that the seller who operates on the basis of concessions merely to take the business of somebody else will suffer in the end. The buyer who seeks goods at or below cost will not be a steady customer. He will always be "shopping" for a bargain and the manufacturer who gains his order today will be without it tomorrow. That goes for any line of business, though buyers who make business unprofitable for others will ultimately undermine their own positions.

In this connection, there is perhaps a timely warning for the cotton trade in preparing for the observance of National Cotton Week, May 16-21. If cotton goods are to be stimulated by a special drive, they should be offered on their merits. Sellers should forestall buyers who seek "bargains" for the exploitation of cotton fabrics during that week. Bargains are not offered as a token of merit, allowing that they are presented as exceptional values. Prices are low enough, goodness knows, for buying to be stimulated at profitable resale levels. The Eberhard Faber Pencil Company offers an example of sound policy, in a recent public announcement that it will select its customers and refrain from selling to those who do not obtain a reasonable profit on resales. In addition it announced the policy of refusing to sell to consumers, regardless of volume offered, while small dealers would have to buy from wholesalers. Resale price cannot be dictated by producers, but the Eberhard plan is a way toward some control.

March brought in a new feeling of confidence in cotton goods markets, by reason of the prospects of long stability as a result of the control agreement, which led B. B. Gossett to remark: "The cotton textile industry is now, for the first time in its history, almost certainly assured of a prolonged period of stability and fair profits."

ENCOURAGING reports were being received from the cotton textile indstry early in March, though that did not denote a particularly active condition. Some mills had advanced their prices on cotton towels and blankets. On the other hand, it was reported that increased orders for cotton yarns were being booked usually at very close prices. The development in this region that has attracted most attention in cotton goods circles recently was the announcement that the Nonquitt Mills of New Bedford had revived the manufacture of seer-

**New England Mill Situation.**

sucker of combed-yarn construction. Similar goods were made by other mills some years ago, when the Nonquitt Spinning Company was concerned only with yarn production.

This move of the Nonquitt is part of a new competitive move by the cotton industry in men's wear for the summer season this year. For months the reports from the wool goods market have spasmodically referred to the imminence of a threatened incursion of cottons into the summer business in tropicals and other light worsteds. A high quality is involved and several high grades of the seersucker line are offered, with the demand reported good. The printing is done to stimulate woven effects which, made of dyed yarns, would make the price too close to the cost of wool goods. Herein is another instance of the inter-competition of different classes of textiles; a reverse in a way of the invasion of wool goods into the field of cottons and silks.

Among other developments is the practically simultaneous disclosure by the Pequot and Pepperell companies of advices which show that New England textile trade names are used by retailers throughout the country to attract consumers to sales. The tendency of manufacturers in this region to capitalize on their trade-marked names through arrangements which maintain the identity of their fabrics in the finished products sold to the ultimate consumer appears to be demonstrating its value. As cited by the Pequot company, incidentally, it is indicated that a sound price policy by the mill can be utilized as a stabilizing influence in distribution at retail.

Attention has been called to the importance of tire-fabric making in the cotton industry of New England by a report that Firestone Tire & Rubber Company recently doubled production at its mills in New Bedford and Fall River. Production at Firestone cotton mills in this region runs upward of 50,000,000 pounds a year. The Firestone mill in New Bedford is reputed to be the largest in the world devoted exclusively to the manufacture of cotton fabric. Its spinning room is 1,100 feet long and contains 115,000 spindles.

While the New England cotton industry has lost a great deal in recent years, the establishment of a new and important branch in tire-fabrics production was made possible by the failure of former units. This type of specialty in cotton goods has received considerable attention during the past ten years or so. Adversity for one may be the opportunity for another. The relatively high cost of manufacture in this region might have been an insuperable obstacle to the establishment of entirely new units for tire fabrics construction, but the ability to secure excellent established plants at low costs was an opportunity.

This is pointed out in a new book by J. Herbert Burgy, of the University of Illinois on "The New England Cotton Textile Industry: a study in Industrial Geography." The author, while writing from the standpoint of New England, paints a graphic picture of the evolving competition in cotton manufacture through the United States. His analysis shows how the geographic factor has given place to the economic as the dominating force in industry. The study is one worthy of the earnest consideration of all persons who are concerned with the general industrial life of the country, in any section.

Massachusetts has not given up the effort to start action toward uniform labor laws throughout the country, a plan in which textile interests have had a part. After more than ten years of trying, the advocates of a proposed resolution by the State Legislature memorializing Congress in favor of a law for uniform hours in the United States secured its adoption. The memorial had been brought up before the State legislature annually for a decade.

By a peculiar twist of things the cotton mills, long treated as fair prey in tax levying, now are besought as saviours of several communities of New England in financial crises. The Amoskeag Manufacturing Company has made a loan of $500,000 to Manchester, N. H., after the city had failed to obtain a single bid on a temporary loan of $300,000 in anticipation of taxes. The city of Lawrence, Mass., recently was negotiating with three large textile corporations for advances on their taxes, to the extent of $600,000, to get them out of financial difficulties.

## National Cotton Week.

NATIONAL COTTON WEEK is scheduled to be the week of May 16-21, inclusive. Statistics and various types of reports indicated that National Cotton Week for 1931 was an outstanding success. The nation became cotton-minded. Even foreign nations commented on the publicity and sales. With the country as a whole having greater confidence in the economic situation, with supplies needed in almost every field of endeavor, 1932 National Cotton Week gives promise of being an even greater success than last year.

During the current year new uses have been sought for, old uses have been extended. Demand and distribution have been studied. Preparations have been thoroughly made for a great campaign.

Last year emphasis was placed largely upon wearing apparel. This year emphasis shall not be lessened any in this field of endeavor but added emphasis will be placed upon industrial uses and household consumption.

Statisticians tell us that 40 per cent of the cotton products manufactured are used in wearing apparel, 40 per cent in industrial uses and 20 per cent in household uses, hence it is easy to see that emphasis last year was largely placed on 40 per cent of the field.

The plans prepared for this year's National Cotton Week will cover the field in its entirety. Great improvement has been made in manufacturing, styling and in all of those necessary fields so important in making products for not only style appeal, but utility appeal.

Every manufacturer should begin in his own community to stimulate sufficient interest to permit the National Cotton Week to be capitalized most effectively in securing the best results obtainable.

THIS belated editorial may be apropos because nearly always, in every community, there are some people who use the old sock, the fruit jar, the mattress and the clock as their chief banking institutions. As this is being written a national campaign against hoarding is being waged to try to bring back into circulation more than a billion and one-half dollars that have gone into hiding and thereby reduced the credit structure of the world by fifteen billions of dollars.

**Hoarding.**

Commodity prices are low and many seem to be still seeking lower levels because of the fact that money is scarce and credit is restricted. When commodity prices are so low wages must be proportionately low and unemployment forced to continue.

If those who are hoarding both large and small amounts could realize the harm that they are doing they would desist. Idle money is worthless, except in the exultant gloating of the miser, and that value is individually selfish and has no community value. Money in circulation helps to relieve debt obligations and increases credit confidence.

Only recently, in a southern state, a dollar bill was tagged and turned loose to see through how many hands it traveled and to how many it furnished means of purchasing power, or debt payment. At the end of a week it was found that it had traveled through the hands of 64 different persons.

If one dollar could do this, what could all of the idle dollars of our nation do toward improving our present economic condition?

SINCE the first of the year the southern textile industry has lost heavily in its membership. Among those who have been rather outstanding, who have recently passed away are Mr. Alexander Long of Rock Hill, S. C., Mr. William Entwistle of Rockingham, N. C., Mr. W. A. Erwin of West Durham, N. C., Mr. Sloan M. Robinson of Lowell, N. C., Mr. Jacob Elsas of Atlanta, Ga., and others. It is well to pause for a moment of reflection, admiration and respect.

**Taps.**

The parts that these men have played in rearing an industry whose infancy was cradled in poverty and nurtured to one of respectibility and prosperity form brilliant chapters in textile history.

Mr. Entwistle, at the ripe old age of 87 years, was a pioneer in the textile industry of North Carolina. A man who so thoroughly believed that night work was wrong that even during the period of high inflation, following the war, never operated his mills at night.

Mr. Erwin was known far and wide as a textile leader of the highest type. His benevolences and his industrial policies will remain as an everlasting memorial.

Mr. Jacob Elsas, a powerful figure in the industry, commanded respect for his business integrity and benevolent philanthropies.

Mr. Alexander Long, the nestor of Rock Hill, wrote large not only in the industrial history of South Carolina, but elsewhere, and so the story might go on relative to a long list.

These statements are made in respect for their lives and for what they stood.

They were generous men who gave of themselves and their resources to the communities in which they lived.

IT HAS been prophesied for the last two years that the textile industry would possibly be the first major industry to emerge from the depression. The statement recently that 90 per cent of the mills in the print cloth group have individually announced an operating policy which would reduce production for the next six months, is a proof that this group is going to put its house in order.

**Hopeful Signs.**

The announcement made by The Cotton-Textile Institute that 86 per cent of the textile spindles of the industry have indicated that they will eliminate the working of women and minors under the age of 18 years from night work is also another far reaching determination upon the part of textile manufacturers to control production and to advance in line with social demands.

The various credit measures that have been enacted by the National Congress recently to liquify frozen assets, to increase credit, and thereby build back confidence in our financial situation will show a reflex in textile operations.

The European situation, although far from satisfactory, is in much better condition than it has been for some time. The pound sterling is increasing in value and some even predict that although England has abdicated from the gold standard, yet her rapid come back may make her a leader among the nations in economic uplift. There have been some financial statements made by rather outstanding textile organizations that have indicated that leadership and management and business sagacity are not dead.

These organizations have been rather outstanding in their earnings. They have not waited for some one to do something for them. They have met the conditions as they have appeared from day to day, and have conducted their business accordingly.

With indications encouraging, with conditions favorable, we may hope for even better returns from a greater number of mills at the end of this fiscal year; provided, the textile manufacturers take advantage of these conditions and proceed with confidence and sanity, changing their business policies when the changing economic conditions demand.

INASMUCH as this is political year along with a serious depression, politicians in their efforts to make the country safe for democracy and safe for republicanism, and incidentally safe for the American people, have proffered many plans and suggestions, one of which is to curb "short selling". It is but natural that the bear operators should come in for a certain amount of investigation because the odium of low prices seems to point the finger of scorn at them more than at any one else, so an investigation

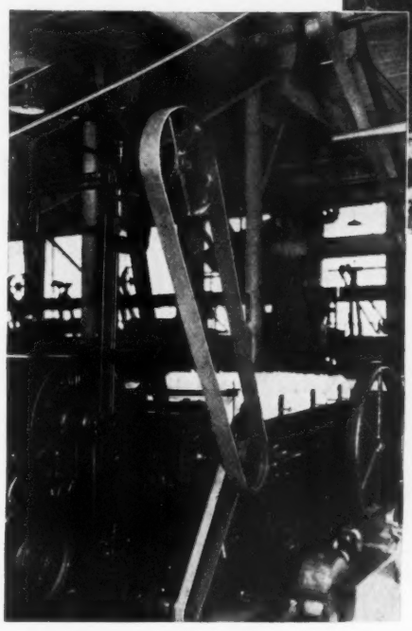
**Short Selling.**

# GOODYEAR *uses* COTTON

GOODYEAR increases the consumption of cotton by using large quantities of cotton in Goodyear belting, hose and other products.

And Goodyear helps reduce operating costs in textile mills by supplying rubber belting and hose scientifically designed, properly constructed and accurately applied to the duties these products must perform.

Take, for example, the special design and construction of Goodyear COMPASS (Cord) Endless and Goodyear THOR Belt, seamless. In them you will find as in no other belting the very qualities of *minimum stretch, maximum power,* and *protected edges* that mean more trouble-free service and more economical service for you.



These and other Goodyear Belts of special construction for cards, frames, slubbers, spoolers, looms, slashers and breakers, pickers, tappers, twisters and other textile mill drives, are specified in their proper places by the G.T.M.—Goodyear Technical Man.

The G.T.M. may have some money ideas for you. Why not write to Goodyear, Akron, Ohio, or Los Angeles, California, and ask him to call?

**TUNE IN:**

Goodyear invites you to hear Arthur Pryor and his Band . . . Revellers Quartet and Goodyear Concert-Dance Orchestra... every Wednesday and Saturday night, over N.B.C. Red Network, WEAF and Associated Stations

THE GREATEST NAME IN RUBBER

GOODYEAR

TEXTILE BELTING

has been started and just about the time it got under way it was decided to investigate the long sellers, or the "bulls", who unduly inflated the market and made possible this financial debacle.

A committee, therefore, has been appointed and given sixty days time in which to investigate both sides of the market operations of the exchanges and then to report its findings with whatever legislative action may be deemed necessary.

It is true that there are doubtless some abuses in the security and commodity exchanges, but there are abuses in every department of every line of endeavor. Some people are inclined to think that there are some abuses in the National Government with its continued threat and ofttimes its restriction of the conduct of American business.

The exchanges perform a very vital function in American business life, and it is hoped that legislators will seriously consider the cost of any restriction that they may deem advisable to impose. Fundamentally all business, either agricultural or industrial, has an element of chance. There is a speculative element in all life. It is true that this speculation can get out of bounds but our history bears evidence that when it does it is brought back in.

Most economists are of the opinion that the speculative element can be controlled better through the financial artery and credit artery than through any other means.

## Comment on the Cotton Market

**New Orleans, March 14th, 1932.**

DUEING the last half of February the trend of the cotton market, except for occasional recessions, remained upward, bulging again in early March to the highest price levels for the upward movement as a result of Secretary Hester's report showing very light sales of fertilizer tags in ten cotton states for seven months ending with the close of February. Thereafter, except for temporary rallies, the market ruled quiet with a downward tendency. However, compared with one month ago Middling cotton in New Orleans today shows somewhat higher—6.80 versus 6.67.

The late downward reaction of the market was attributed to late private estimates indicating the probability of a smaller decrease in this year's acreage than was expected earlier in the season, perhaps only about 10 to 15 per cent decrease, also to the weakness of the New York stock market and a somewhat less urgent demand for spots in the South and for cotton goods in the North.

Spot sales at reporting southern markets for the week ending March 11th were 89,503 bales versus 55,572 for the corresponding week last year, and from August 1st to March 11th, 6,485,985 bales against 4,893,500 for the corresponding period last season.

### Market Awaiting New Incentives.

While the cotton market at present appears to be waiting for the coming to the surface of some fresh incentive to stimulate trading, speculation being conspicuous by its absence, which has been the case for a long while past, it appears to be gradually working into a more encouraging position, especially as to the supply of foreign growths, the world's visible supply of which is now much less than one year ago, which deficit is likely to increase as the season grows older, due to last year's foreign production being estimated at only about 9,346,000 bales against the record of 11,222,000 year before last.

That the world is consuming more of American cotton than of foreign growths this season, due to the shortness of the foreign production and relative cheapness of the American product compared with East Indian, which is the reverse of last season, is noted in the following interesting returns for the first half of the season:

### World Consuming More American Cotton Than Foreign.

**INTERNATIONAL FEDERATION OF SPINNERS REPORT FOR THE FIRST HALF OF SEASON**

| August 1 to January 31 inc.—Bales | This season | Last season |
|---|---|---|
| World's consumption of American lint | 5,940,000 | 5,278,000 |
| Of foreign growths | 5,530,000 | 5,886,000 |
| Of all kinds | 11,470,000 | 11,164,000 |
| World's mill stocks of American, Jan. 31st | 2,710,000 | 2,427,000 |
| Of foreign growths | 1,926,000 | 2,159,000 |
| Of all kinds | 4,636,000 | 4,586,000 |

**BRITISH BOARD OF TRADE REPORT FOR FEBRUARY**

| | This year | Last year |
|---|---|---|
| Exports of yarn, pounds | 13,000,000 | 9,000,000 |
| Exports of cloth, yards | 180,000,000 | 146,000,000 |

**ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK FEBRUARY STATISTICS**

| Yards— | February 1932 4 weeks | January 1932 4 weeks | February 1931 4 weeks |
|---|---|---|---|
| Production | 244,342,000 | 232,707,000 | 212,168,000 |
| Sales | 245,582,000 | 338,010,000 | 326,691,000 |
| Shipments | 258,744,000 | 268,899,000 | 248,354,000 |
| Stocks | 239,654,000 | 254,056,000 | 319,328,000 |
| Unfilled orders | 377,988,000 | 391,150,000 | 395,802,000 |

February sales of domestic cotton goods were 100.5 per cent of production against 145.2 in January this year and 154.0 in February last year. Shipments were 105.9 per cent of production against 115.5 in January this year and 117.0 in February last year. Stocks at the end of February decreased 5.7 per cent against a decrease in January this year of 12.5 and a decrease in February last year of 10.0. Unfilled orders at the end of February decreased 3.4 per cent against an increase in January this year of 21.5 and an increase in February last year of 24.7 per cent.

**CENSUS REPORT**

| United States—Bales— | This season | Last season |
|---|---|---|
| February consumption, lint | 450,018 | 433,376 |
| February consumption, linters | 52,764 | 53,687 |
| February consumption, including linters | 502,782 | 487,063 |
| Consumption of lint, 7 months | 3,081,290 | 2,893,626 |
| Consumption of linters, 7 months | 386,021 | 389,648 |
| Consumption including linters, 7 months | 3,467,311 | 3,283,274 |
| Mill stocks, February 29th | 1,633,380 | 1,550,361 |
| Stocks in public storage and warehouses, February 29th | 9,510,690 | 7,313,912 |
| Stocks in mills, public storage and warehouses February 29th | 11,144,070 | 8,864,263 |
| Active spindles during February | 25,189,748 | 25,798,034 |

### Consumption Prospects.

As was the case during the first half of the season, the world's consumption of American during the last half of the season will probably be larger than it was during the corresponding period last season, but of foreign growths it will likely be smaller than for the last half of last season. While there has been a splendid demand from the Orient thus far this season, the domestic demand has not been so good, and the demand from the Continent was poor and only fair from England. Of late, however, shipments to England have improved, and there are prospects of the demand from the Continent increasing, perhaps from domestic spinners also.

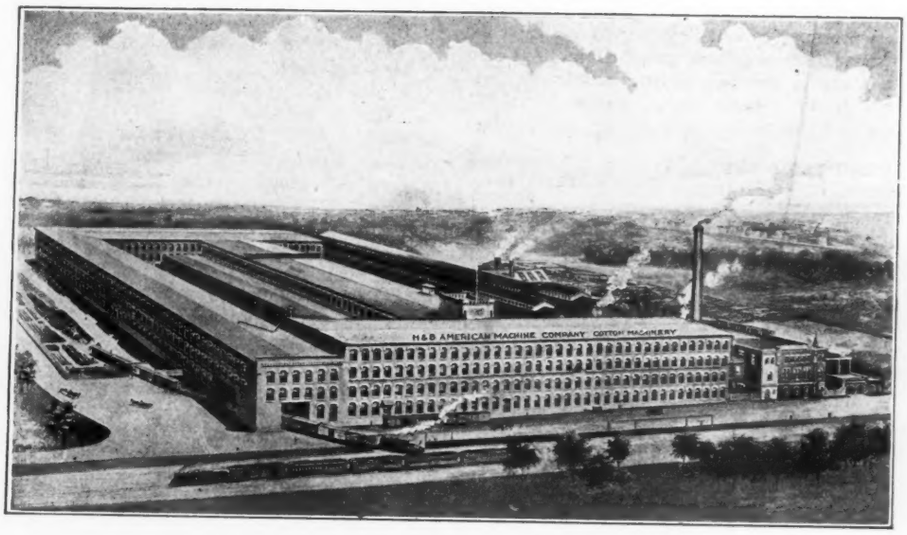
### Trade Improving in England.

Reflecting the improvement in England, British exports of yarn and cloth made a favorable showing for February, the first month of the last half of the season. Recently Manchester advised: "Cotton mill workers have reached a temporary agreement with their employers in the 'more looms per weaver' controversy which has agitated the industry for months. The agreement, still to be ratified, permits a weaver to work 48 hours a week on six looms for an average wage of 42 shillings (about $10.50).

This agreement, if ratified, will likely make for harmony and better business in England since it will probably lessen the cost of mill production, permitting Manchester to compete to better advantage for trade, especially as money is now cheaper.

# H & B AMERICAN MACHINE CO.

PAWTUCKET RHODE ISLAND

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INCLUDING

A-1-ONE PROCESS PICKING

REVOLVING FLAT CARDS

NEW MODEL MECHANICAL STOP-MOTION DRAWING FRAMES

SLUBBING-INTERMEDIATE-ROVING FRAMES

NEW MODEL HIGH-DRAFT SPINNING FRAMES

MEDIUM AND HEAVY PATTERN TWISTERS

——ATLANTA OFFICE——

815 THE CITIZENS & SOUTHERN NAT'L B'K BL'D'G.

Last week the Bank of England reduced its discount rate to four per cent from five per cent. In early February it was six per cent, which was the rate to that time since last September when Great Britain left the gold standard.

In this country, America, general conditions seem to be on the mend. The railroads, many financial institutions and farmers in need are being financed by government aid. Such constructive accomplishments should bear fruit as the good work continues to stimulate commerce and industry, increasing employment and restoring confidence.

To March 11th, the South marketed 13,771,013 bales versus 12,788,655 to corresponding date last season, of which 178,980 bales came into sight the past week against 117,604 the corresponding week last year. Notwithstanding the heavy movement to market offerings have not been pressing. However, some people are of the opinion that there will likely be more pressure to sell in order to get cash to meet new crop preparation expenses as planting time approaches or when planting becomes more general. But as to that, much will likely depend upon weather developments, the character of the trade demand, etc., meanwhile.

**EXPORTS FROM UNITED STATES**

| August 1 to March 11—Bales— | This season | Last season |
|---|---|---|
| To Great Britain | 907,000 | 910,000 |
| To Continent | 2,468,000 | 3,083,000 |
| To Orient | 2,778,000 | 1,160,000 |
| To Canada | 147,000 | 153,000 |
| Total | 6,300,000 | 5,306,000 |

**WORLD'S SPINNERS TAKINGS OF AMERICAN COTTON**

| August 1 to March 11—Bales | This season | Last season |
|---|---|---|
| North and Canada | 1,022,000 | 1,114,000 |
| South | 3,155,000 | 3,023,000 |
| Foreign, exclusive of Canada and Orient | 3,113,000 | 2,928,000 |
| Orient | 2,142,000 | 843,000 |
| World | 9,432,000 | 7,908,000 |

**WORLD'S VISIBLE SUPPLY OF COTTON MARCH 11**

| Bales— | This year | Last year |
|---|---|---|
| American | 8,678,029 | 7,651,656 |
| Other kinds | 1,827,000 | 2,607,000 |
| All kinds | 10,505,029 | 10,258,656 |

As to prospects for the South's next cotton crop, preparations are reported as generally backward owing to much rain during the winter and the late cold wave. Late private estimates indicate a probable reduction in the acreage of only about 10 to 15 per cent, or a smaller reduction than generally expected earlier in the season, but sales of mules and fertilizer tags to close of February are reported much smaller than to corresponding date last year, but there is a good season in the ground, while it is thought that the recent cold weather destroyed much of insect life, perhaps killed some weevil especially in the northern half of the belt where temperatures were the lowest. Some cotton was reported planted and some up in southwest Texas, but owing to the recent damaging low temperatures, some replanting may be necessary in that early district.

Secretary Hester's statement of fertilizer tags sold in cotton states for seven months from August to February, both inclusive. Officially reported by agricultural bureaus and state boards:

| Year— | 1932 | 1931 | 1930 | 1929 |
|---|---|---|---|---|
| Tons | 473,351 | 972,080 | 1,571,743 | 1,224,319 |

**TOTAL AVERAGE RAINFALL IN TEXAS**

| Inches—Year— | 1932 | 1931 | 1930 | 1929 | Normal |
|---|---|---|---|---|---|
| Nov. to Feb. inclusive | 14.28 | 10.45 | 8.13 | 8.75 | 8.11 |

Because of the heavy rains during the winter, there is a good season in the ground, especially in Texas, which is always looked upon as favorable for crop prospects providing favorable weather is had during the spring and summer. But if the spring should happen to bring further alternating heavy rains, farm work would likely be interfered with all the more. Furthermore the winter was one of the warmest on record, and it is possible that a late cold spring may follow. Such developments in either case would be unfavorable for new crop prospects, and farmers' intentions, as per recent private estimates, to seed a larger acreage than expected earlier in the season, may have to be modified eventually.

## What the Southern Mills are Doing

THE BEVELLE plant of the Avondale Mills, at Alexander City, Ala., was recently completely equipped with Barber-Colman automatic spoolers and super-speed warpers furnished by Barber-Colman Company, Rockford, Ill. This is the second mill in this group in which installations of Barber-Colman spoolers and warpers have been completed in 1932, the first being the Pell City (Ala.) plant, which is equipped with automatic spoolers and high speed ball warpers.

A $10,000 addition to the Burlington Silk Mills, Burlington, N. C., to provide floor space for 48 looms, has been completed.

Robert S. Abernathy has purchased the interests of J. A. Abernathy, A. L. Quickel, and J. A. Abernathy, Jr., in the James Cotton Mills, Maiden, N. C., which have a total of 8,000 spindles.

A new cloth room is to be erected by the Chiquola Mfg. Co., Honea Path, S. C. Gallivan Construction Company, Greenville, have the contract for the work.

J. E. Sirrine & Co., Greenville, S. C., are engineers on proposed extension plans for the Eureka Cotton Mills, Chester S. C., which will include some additions to the plant and alterations of other units.

Southern Weaving Co., Greenville, S. C., have purchased a "Hurricane" skein drying machine, made by Philadelphia Drying Machinery Co., through the Carolina Specialty Co., of Charlotte.

Pendleton Mfg. Co., LaFrance, S. C., has installed 38 looms bringing the total equipment to 300.

Lancaster Cotton Mills, Lancaster, S. C., have purchased six automatic spoolers and four high speed warpers from the Barber-Colman Co., Rockford, Ill.

Appleton Co., Anderson, S. C., have installed eight No. 40 winders, and high speed warpers, purchased from the Universal Winding Co., Boston, Mass.

Dallas Mfg. Co., Huntsville, Ala., have purchased several Hermas shearing machines through Carolina Specialty Co., of Charlotte.

A complete equipment of Veeder-Root pick counters for looms has been purchased by the Buck Creek Cotton Mills, Siluria, Ala., through the Carolina Specialty Co., which also have made an installation of similar equipment at the John P. King Mfg. Co., Augusta, Ga.

Florence Mills, Forest City, N. C., have recently installed three No. 40 winders and modern high speed warpers purchased from Universal Winding Co., Boston, Mass.

Burlington Mills, North Carolina Silk Mills, and Alamance Weaving Co., Burlington, N. C., have equipped their new looms with Veeder-Root pick counters, purchased through W. A. Kennedy & Co., of Charlotte. This company has also furnished similar equipment at Cannon Mills, Plant No. 7, Salisbury, N. C.

Erwin Cotton Mill Co., West Durham, N. C., have installed a complete equipment of Foster high speed cone warping, including Model 102 cone winders and Foster magazine cone creels, purchased from Foster Machine Co., Westfield, Mass.

United Throwing Co., Ossipee, N. C., have installed an Inversand water softener, manufactured by Hungerford & Terry, Inc. W. A. Kennedy & Co., of Charlotte, are the southern representatives for the equipment.

Fletcher Works, Philadelphia, Pa., have completed installation of additional rayon twisters at Stonecutter Mills Co., Spindale, N. C., the equipment being purchased through W. A. Kennedy & Co., Charlotte,

Hungerford & Terry, Inc., of Clayton, N. J., are installing additional filter plant equipment at the Wade Mfg. Co., Wadesboro, N. C., which will double the company's filtered water capacity.

United Throwing Co., Ossipee, N. C., a unit of Burlington Mills, is installing 4,000 Monarch twister spindles supplied by the Atwood Machine Co. This installation will make this plant the largest single unit in the South twisting rayon crepe yarns exclusively.

# SALES AND PRODUCTION

## *departments of Industrial Rayon Corporation agree on Private Line Teletypewriter Service*

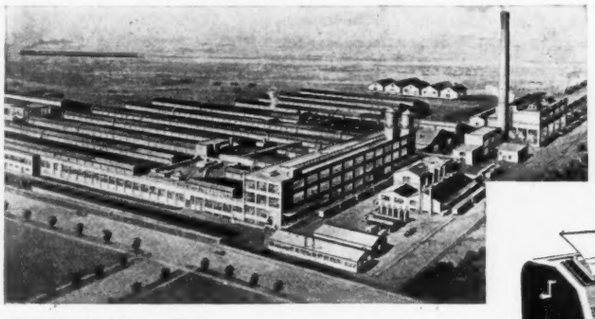
### TYPING BY WIRE

*"All orders are received at our Cleveland office, and customers are entitled to expect shipments to be made from either or both plants the same day we get the orders. Quick and constant communication between the two plants is therefore very essential. Accuracy is important, too, because we sell many types and sizes of yarn. Errors must be avoided at all cost. Without Teletypewriters we could not offer the prompt and accurate service which has been such a large factor in the steady growth of our sales year by year."*

A. A. MURPHY,
*Vice-president in Charge of Sales*

*"The Teletypewriter has been indispensable as a means of communication between our headquarters in Cleveland and our new plant in Covington, Va. Even before the southern plant was erected we had the Covington instrument set up in a convenient barn and used it for transmitting orders and reports concerning equipment, construction and other important matters. We use Teletypewriter Service daily in supervising production schedules and in maintaining close contact with every detail of operation."*

H. B. KLINE,
*Vice-president in Charge of Plant Operations*



*Cleveland, Ohio, plant*

*Covington, Virginia, plant*

THE Industrial Rayon Corporation has general offices and a large rayon plant at Cleveland, and another large plant at Covington, Va. Speedy, accurate, uninterrupted typewritten communication is essential to smooth plant operation and quick customer service. It is provided by private line Teletypewriter Service—*typing by wire.*

Throughout the business day, Teletypewriters in the Cleveland headquarters are continuously connected with machines in the Covington plant. Information, inquiries, reports, typed on the Teletypewriter at one plant are instantly reproduced at the other. Each unit has identical copies from which to work, guarding against errors. For example, Cleveland headquarters transmits instructions regarding operating practices and administrative matters to the Virginia plant; and in return receives purchase orders, production reports, and information about goods shipped.

Many concerns have found Teletypewriter Service an important factor in building customer relations. Private line Teletypewriters can be used for any distance — 300 feet or 3000 miles — and to connect any number of separated offices. Telephone your local Bell Company Business Office for complete information.

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TELETYPEWRITER SERVICE

# New Textile Equipment and Publications

## Murray System of Converting Pickers to Single Process.

An interesting method of converting two- and three-process picking equipment to single- or one-process has been developed and is being marketed by The Murray Company, Atlanta, Ga. It is described herein with the aid of the accompanying sketches.

The obvious reasons for converting existing two- and three-process equipment to single-process, it is pointed out, are the elimination of labor necessary for doffing and feeding laps, when doubling four laps into one under the previous system; the saving of power involved in the elimination of drive requirements by the removal of the calendering sections from all but the finisher section; and a better preparation and treatment of the stock by not calendering it into a compact mass until all beaters act on it, thus presenting to all beaters a fluffy mass rather than a compressed body of stock.

This method used in converting pickers will be clearly understood by reference to the accompanying sketches. They show a three-beater arrangement converted, the same principles being used in changing two processes to the single process.

First, the calender heads or lap-forming sections are removed from the breaker picker and the intermediate picker, and the long feed apron and side rails taken off of the finisher and intermediate pickers. The next step is to set all machines close together in a single line. A short feed apron is used between the intermediate section and the finisher feed rolls. The hopper feeder is set up in the regular position. At the point *A*, the standard evener on the finisher is shown. The only change made on this part is to replace the short shaft in the quadrant with a longer shaft, which extends through the machine in order to synchronize the set of cone eveners at *B* by connecting with a similar quadrant and shaft by using a set of adjustable lever arms, permitting positive control of evener *B* by evener *A* (the latter being actuated by the evener motion on the finisher section with any ratio desired.

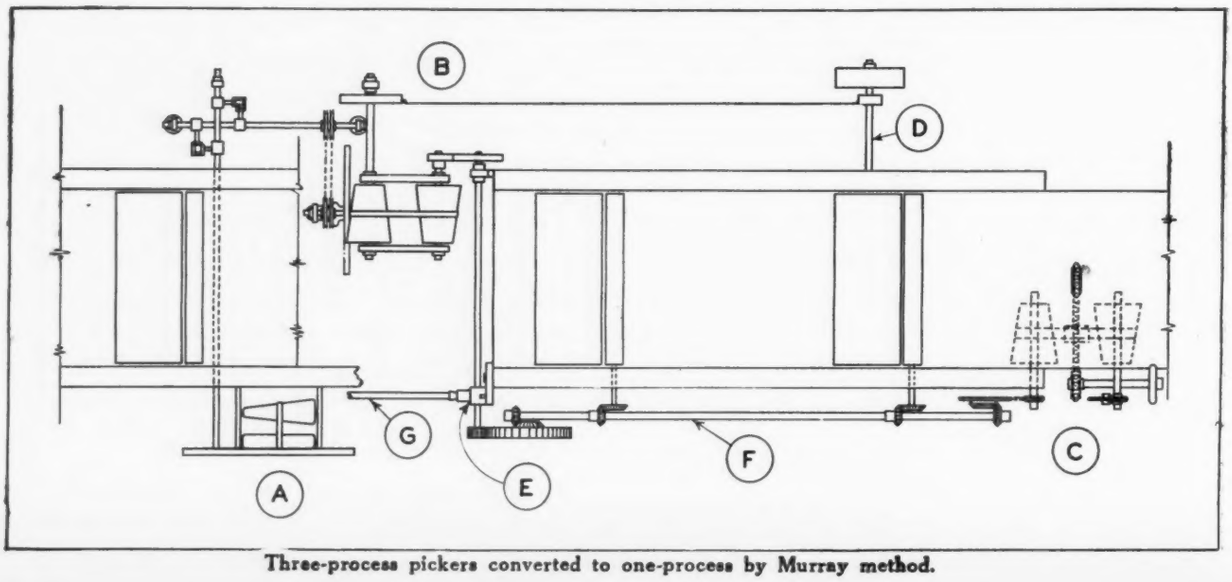
In providing this connection with evener *B*, a recent development has been to locate evener *B* underneath the picker, which removes it from occupying aisle space and makes the equipment more compact, requiring less floor space.

Evener *B* is driven from the beater shaft *D* by a belt, the driven cone running at a constant speed of 400 r.p.m. to 500 r.p.m. The other cone is fitted with a 14-tooth pinion that meshes in a 76-tooth spur gear to drive a cross-shaft. On the opposite end of the cross-shaft, at *E*, is a 13-tooth pinion meshing in an 80-tooth idler gear. This pinion is used to start and stop motion on the rear sections of the machine being mounted in a sliding bearing that is controlled by the knock-off lever on the finisher through shaft *G*. When the lap is finished, and the knock-off lever operates, this slides the pinion out of the idler gear, stopping the feed rolls on the rear portions of the machine. The 80-tooth idler gear is connected by a train of gears to a side shaft, *F*, that drives the feed rolls of the first and second beaters and the hopper feeder.

A novel feature is the use of a pair of cones, or regulator, shown at *C*, which control the speed of the lifting or elevating apron on the hopper feeder. Any change of speed caused by the movement of the finisher evener, is directly transmitted through the mechanisms explained to affect instantly the speed of the rear feed rolls, as well as the finisher feed rolls, and also, through the cones, at *C*, the speed of the elevating apron delivering cotton to the first feed roll, providing accurate synchronization. All of the parts are mounted in ball bearings to insure a sensitive action throughout.

An endless chain actuated by the side shaft at *C* carries the belt shippers which move the belt on the two cones at *C* for changing the speed of the lifting apron. In some installations, the belt can be shifted from a float in the hopper, actuated by the level of cotton in the hopper, to alter the speed of the lifting apron, independently of the remainder of the machine, as the level of the cotton in the hopper changes.

Other installations dispense with the automatic float device, in which cases the speed of the feeder is then




Three-process pickers converted to one-process by Murray method.

# MAKING PRODUCTION COSTS JUMP THROUGH HOOPS

The past two years have made a lot of us do a great deal of fancy jumping through hoops in an endeavor to keep the red ink off the ledgers.

It is interesting to note that those who have kept in the black have been making their own production costs jump through hoops, instead of indulging in that exercise themselves.

Alemite points with pride and pleasure to many clients in the textile world who have found through savings in production the road to profits, despite the times.

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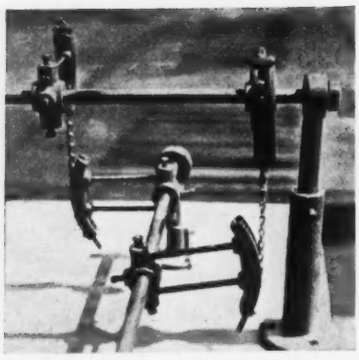

Photograph of adjustable levers by which positive control is given of evener B from evener A . .

set by the operator with a handwheel on the hopper evener at which point it will remain until again changed.

It is pointed out that evener *B* provides a means of regulating the speed of the back feed rolls at any desired ratio with the finisher, and that this ratio is maintained with all of the variable speeds of the finisher feed rolls. It is explained that the success of any method of conversion to single process must depend largely upon synchronizing the separate units to operate as a single machine.

The principles explained are to equalize the flow of cotton from the first beater to the finisher without any drawing or retarding of the lap at any point between, and for this reason, it is pointed out it is essential that the flow of cotton from the feeder be regulated to maintain uniform and even weight of laps. Exhaustive tests in mill practice have demonstrated the production of yard-by-yard and total lap weights well within mill tolerance.

Furthermore, as pointed out, the elimination of the breaker and intermediate calender sections removes a large percentage of the power requirements, so that in several instances the power required for the converted equipment is not greater than that formerly used for only the finisher picker. In addition, a saving of labor is effected. One mill superintendent has explained also a decrease in flat strippings at the carding upon the theory that the cotton is presented to the beaters in a loose, fluffy condition, instead of being calendered compactly, giving the beaters a better opportunity for cleaning the cotton without injury to the fibers, breaking them, etc.

:: :: ::

## New du Pont Blue.

Pontamine Diazo Blue 5GL has recently been announced by the dyestuffs division of the organic chemicals department of E. I. du Pont de Nemours & Co., Wilmington, Del. This dyestuff, it is stated, when developed with beta naphthol, is greener and brighter than Pontamine Diazo Blue 3G and greener than Pontamine Diazo Blue BR. It is said to be used extensively for medium and light shades on cotton and rayon when a pure white discharge is desired. It is fast to light, for a diazo color, being superior in this respect, as well as in dischargeability, to Pontamine Diazo Blue 3G. It is further stated that Pontamine Diazo Blue 5GL is very soluble, levels and exhausts well, and may be applied with satisfactory results in all types of machines. In addition to its light fastness, it is pointed out, it is sufficiently fast to water and washing to obviate any danger of the color bleeding into the white during the discharge printing operation.

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## New Model of Cooper Hewitt Mercury-Vapor Lamp for Industry.

General Electric Vapor Lamp Company, Hoboken, N. J., have announced a new and improved model Cooper-Hewitt mercury-vapor lamp for industrial lighting. A summary listed of the new model includes: "Improvements in tube design and performance; simplified reflector equipment; simpler and more rugged auxiliary equipment and electrical features embodying the latest requirements of the Underwriters' Laboratories."

Externally the unit has been improved by the refinement of lines; sharp corners eliminated and the general appearance improved. Enclosed wiring and a new finish are used.

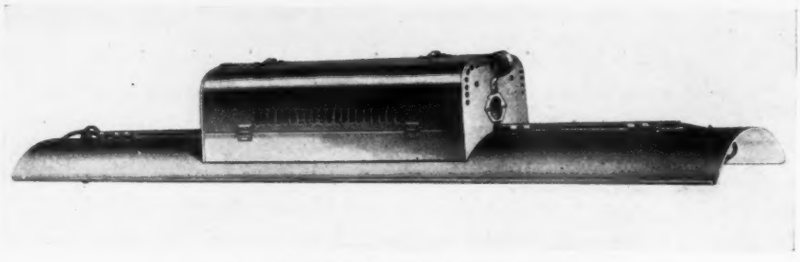
In the construction of the mercury-vapor tube or light source, a new style of straight line appearance has been developed. Positive terminals are in the plan of the tube and reduced in length; negative terminals have been relocated at the top of the bulb, and reduced in length.

The new model tubes, as a result of improvements, is limited in operating position, two styles—one for horizontal and one for vertical operation—being available.

All tube terminals are now of the intermediate screw base, screw shell type and by means of insulating covers are easily attached by hand. The simplification and straight line form of the new tube, it is pointed out, reduces shipping and handling hazard and results in less accidental breakage.

The new design reflector has rounded corners, concealed wiring, greater reflection surfaces and elimination of holes. Positive terminals passing through the reflector have been eliminated. The new reflector completely covers the tube at both ends. The new auxiliary is slightly longer than previous models, and is equipped with draw pressed end plates with rounded ends, flush mounted attachment plug and stronger cover latches. Within the auxiliary greater spacings are provided to permit easier access to resistance units, transformer taps, attachment plug, etc. The new model is equipped with a three-point attachment plug, the point being grounded within the auxiliary frame of the lamp and may be used when desired as a grounding point for the lighting unit.

A copper oxide rectifier, in place of the starting resistance coil, provides quicker starting. The lamps are available in standard black finish and also in battleship gray.



New Model Mercury-Vapor Lamp.

## New Light-Running Dye Jig.

The Textile-Finishing Machinery Co., Providence, R. I., have announced a new light-running dye jig, on which application has been made for patent. This machine, it is explained, is especially adapted for light silks, rayon, cotton and silk, rayon and silk and fine cotton fabrics. The cloth tension is under control, warp wise, at all times.

The machine is a complete, self-contained unit, individually driven, eliminating side shaft drives, pulleys and belting; this permits placing the machine in any convenient place, and allows the operator to move freely on all sides of the jig.

The jig is driven by a 1-hp. motor through roller bearing, worm gear reducer units and flexible couplings. The clutches are of the dry-plate type to insure smooth starting and eliminate jerking. The beam rolls turn in SKF ball bearings and are covered on the ends to prevent formation of rust and spotting of goods. The four immersion

# CONDOR ENDLESS BELTS CARRY HEAVY LOADS

## *Two 16-inch 8-ply 70-foot*
## *CONDOR TRANSMISSION BELTS*

—giving a good account of themselves on heavy main drives in a textile mill. These belts are endless and have been in service more than a year without take-up or special attention.

—the customer reports these drives are "very satisfactory and efficient."

—Condor remains virtually constant in length, degree of flexibility, and pulley grip month after month over a wide range of atmospheric and working conditions.

—try Condor "work muscles." They turn machinery to a *new* economy tune.

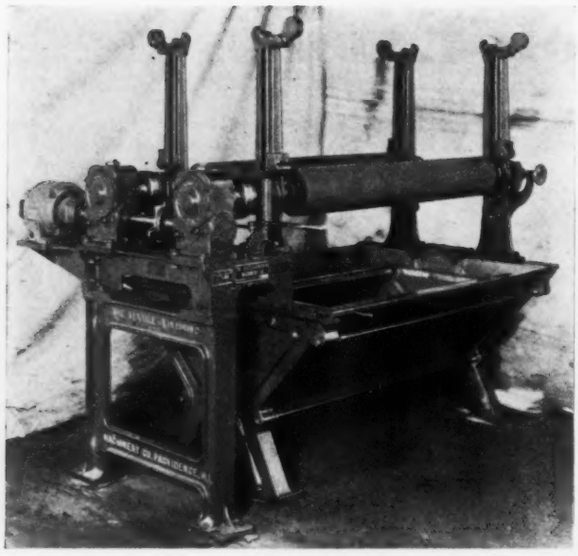
**Condor LINE**

| | |
|---|---|
| V-Belt | Fire Hose |
| Flat Belt | Steam Hose |
| Air Hose | Mill Sundries |
| Cone Belt | Suction Hose |
| Acid Hose | Oilless Bearings |
| Water Hose | Rubber Lined Tanks |

Rubber Covered Rolls
Industrial Brake Blocks and Linnig

Condor

**The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.**
Executive Offices and Factories, Passaic, New Jersey



To left, new light running dye jig . .

rolls are equipped with Parock bearings and are suspended in the tank by a bracket bolted to the outside frame of the job, eliminating the necessity of drilling through the lining of the tank.

The tank for this machine is of a type which permits the use of a small quantity of dye liquor; it is constructed of wood, Monel metal lined and is supported by cast iron frame work. Other types of tanks are available. The hinged arm of the batcher is self-locking and it is possible to carry an extra batch bar atop of the batch arms so as to keep these extra batch bars with the wood shells from lying around on the floor, it is explained.

:: :: ::

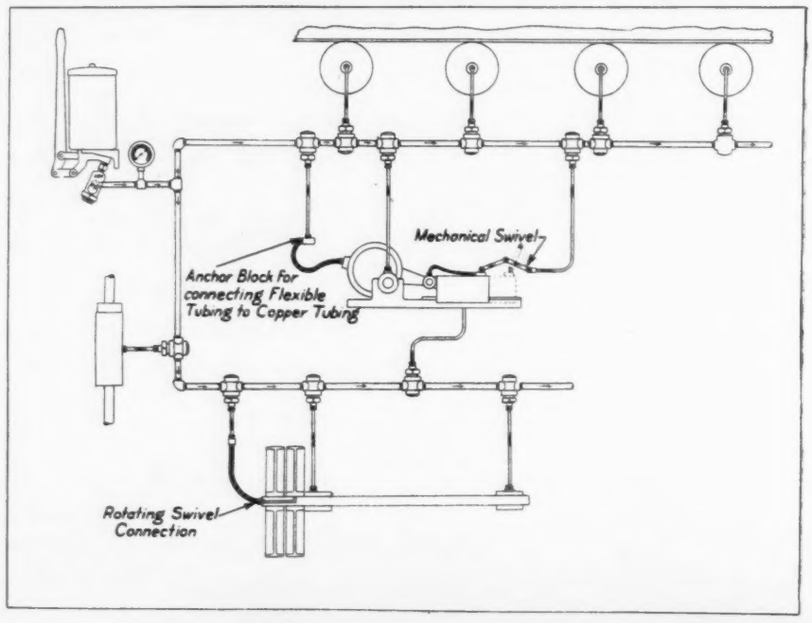
## Metro-Matic Lubrication Systems for Machinery.

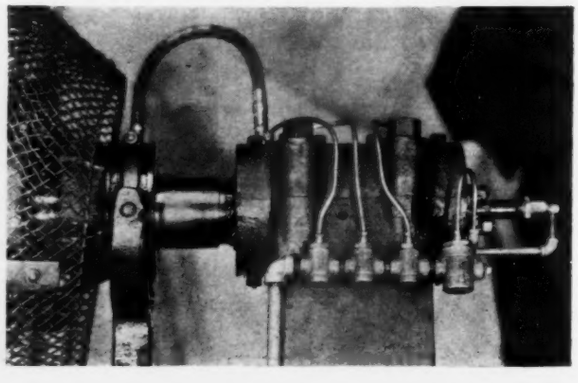
Alemite Corporation, 2650 North Crawford St., Chicago, Illinois, have announced the Alemite Metro-Matic lubrication system, which is shown in the accompanying sketch and photograph. The system uses a pipe line arrangement whereby the lubricant is forced under high pressure to each bearing on the machine. A measuring valve, located on the pipe line near the bearing, discharges a predetermined amount of lubricant at each operation of the pump handle.

A short length of copper tubing conducts the lubricant from the measuring valve on the pipe line to the bearing. To operate the machine, a pressure of 2,000 pounds is pumped into the compressor and the valve released. Thus a new and measured shot of clean lubricant is forced into each bearing, and the continued pressure has forced a new load of lubricant into all the vacuum chambers, charging the measuring valves for the next discharge operation.

The measuring valves located on the pipe line are connected in multiple, and as many branches as necessary can be taken off at any point where other bearings need to be supplied.

This system, it is explained, furnishes lubricant to the bearing while it is in operation; leaves no bearing overlooked; economizes in the use of lubricant, etc.



Above, the Metro-matic lubrication system; to right, close-up view of bearing . . . .

## New Bulletin on Roller Bearings.

Shafer Bearing Corporation, 621 So. Kolmar Ave., Chicago, Illinois, have issued Bulletin No. 501 covering the latest sizes of Shafer roller bearings, both single and double row. The bulletin contains complete dimensions and prices, with speed factor table for figuring intermittent speeds.

:: :: ::

## Barber-Colman Produces New Surface Thermostat.

A surface thermostat, designed to be strapped or clamped to the external surface of a tank, pipe, vat, duct or other metal container in which it is desired to control the temperature automatically from a surface type thermostat, has been added to the line of electrically-operated and electrically-connected temperature control equipment produced by Barber-Colman Company, Rockford, Illinois. It is pointed out that the instrument has an extremely quick response to changes of temperature, and may be applied to almost any type of container without any holes being drilled or special mountings made. It is designed for use in connection with other instruments making up

# BECCO IS READY TO BRING YOU THESE ADVANTAGES

BOTTOM READY FOR ANY FINISH

PERMANENT FULL WHITE BLEACH

SIMPLER, CHEAPER ROUTING

CONSIDER the important advantages which the **Becco** process brings to **your** plant . . . Compare the superior results of a **Becco** bleach . . . then you will quickly realize why the trend today in bleaching is **definitely*** toward **Becco.**

The **Becco** process, in a few simple steps, prepares the goods for **any** finish you desire. Bottom is excellent; and a softer, more attractive feel is imparted to the fabric.

But that is not all! The bleach is full, remarkably permanent. And because of the gentle action of **Becco,** the tensile strength of the fibres is unimpaired.

Routing is also simplified, with an appreciable saving in the labor cost of after-processes. Floor space, materials and water are conserved.

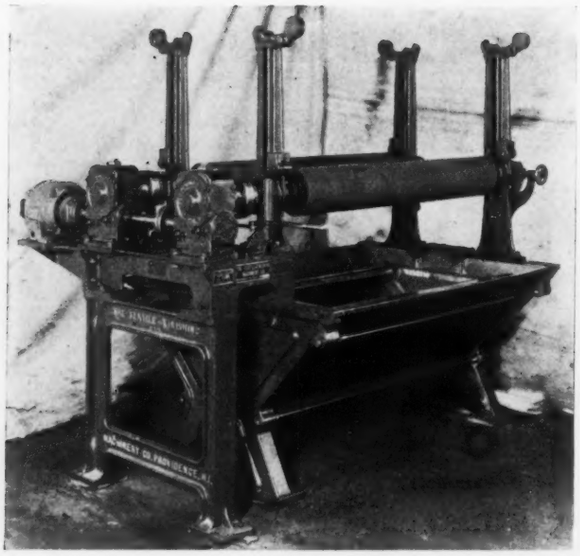
Why not let a **Becco** engineer demonstrate in your plant on a practical run? This obligates you in no way, and does not interfere with plant routine. Write for full details.

***Special tank cars, with carrying capacity of 8000 gallons, now insure rapid, economical delivery of Becco concentrated hydrogen peroxide to many mills.**

PLUS RAPID TANK CAR SHIPMENT

BUFFALO ELECTRO-CHEMICAL COMPANY, Inc.

Boston New York Philadelphia
Charlotte Chicago
Toronto Montreal



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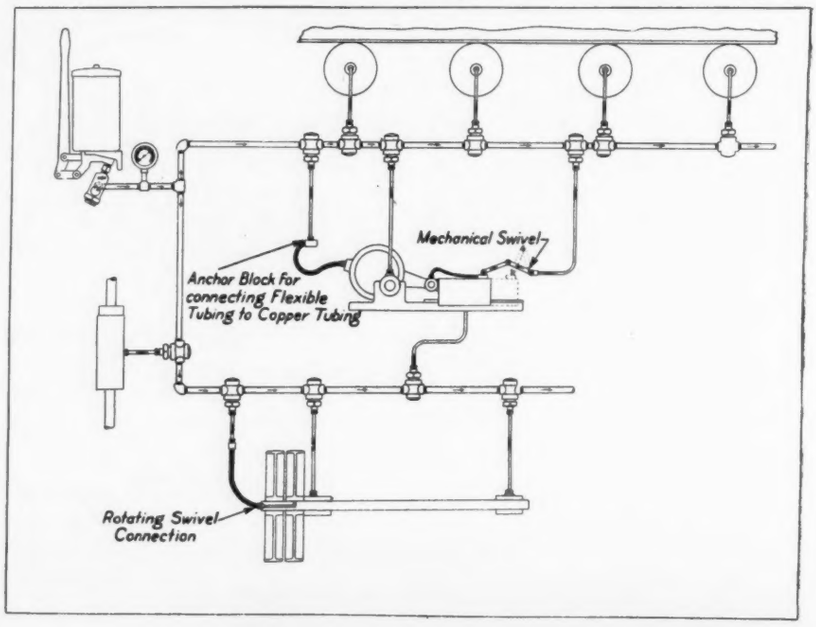


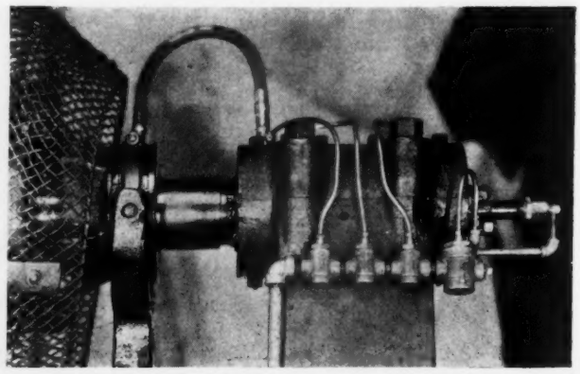

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***Special tank cars, with carrying capacity of 8000 gallons, now insure rapid, economical delivery of Becco concentrated hydrogen peroxide to many mills.**

PLUS RAPID TANK CAR SHIPMENT

BUFFALO ELECTRO-CHEMICAL COMPANY, Inc.

Boston New York Philadelphia
Charlotte Chicago
Toronto Montreal

a three-wire low-voltage system of temperature control.

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### Morse Chain Handles Pullmore Clutches.

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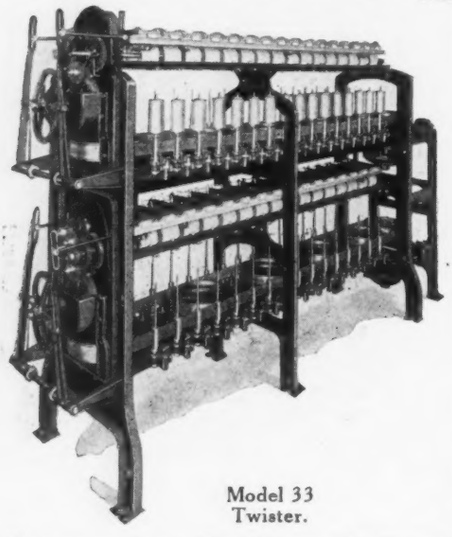
Morse Chain Company, Ithaca, N. Y., a division of Borg-Warner Corporation, have been appointed exclusive sales agents for Morse Pullmore clutches, manufactured by the Rockford Drilling Machine Co., Rockford, Ill., another division of Borg-Warner. This sales arrangement is made to avoid duplication of sales effort as the Morse industrial sales division specializes on power transmission units. This new Pullmore unit fits in with the present line of Morse silent chain drives, roller chain drives and flexible couplings. It is a multiple disc friction drive unit made in six standard sizes. It is compact, perfectly balanced, and can be operated at high speeds— in oil bath or dry— all parts being interchangeable, it is stated; centrifugal force has no effect on its action.

:: :: ::

### New Model 33 Twister with "Unit Control".

Fletcher Works, Glenwood Avenue and Second St., Philadelphia, Pa., have announced to the silk and rayon throwing industry a new Model 33 twister with "unit control". This feature, unit control, which the company points out has been called the greatest improvement since the swing spindle, is a compact self-contained unit which controls the formation of the finished product through the medium of both twist and traverse. This is the first time that



Model 33 Twister.

the traverse cam and twist gears have been unified on one end of the machine, the company explains, and continues:

"This arrangement has many advantages. The traverse drive is direct instead of going through the cork roll shaft. This eliminates teetering and lost motion and insures a steady accurate traverse. A unique oiling arrangement eliminates any possibility of oil spattering onto the machine or the silk. Further advantages are accessibility, convenience, and less floor space requirements."

The Model 33 twister includes other Fletcher features, the "Oilwell" spindles, with a year's supply of oil, large idler pulleys, adjustable spindle swings; pressed steel take-up rolls driven by spindle belt; sliding motor drive, etc. The double deck Model 33 is four inches lower than its predecessor, the Model 30.

# NEWS ITEMS *with a Textile Slant*

### Over 86% of Country's Spindles Endorse Movement to Eliminate Women and Minors from Night Work.

The following announcement released on March 2nd by The Cotton-Textile Institute, Inc., was received too late for use in the March issue of COTTON, and is included here:

Another milestone has been passed by the cotton manufacturing industry in its progress along lines of sound co-operation. The mills now conforming to the recommendation of the Cotton-Textile Institute that night employment of women and minors be discontinued plus those indicating that they will pursue the policy after March 1, 1932, represent over 86 per cent of the spindles in going cotton mills in the United States including 82 per cent of those in the night classification. The total spindles affected amount to 26,152,806. Not included in this number are approximately one million spindles in mills now closed but which subscribed to the recommendation a year ago.

The most important accessions of new support for the policy came from print cloth, narrow sheetings and carded yarn mills. Pursuance of the policy in these and other well-defined groups to the extent of 80 per cent or more is also indicated and the recommendation is therefore successfully launched on its second year.

In making this announcement, George A. Sloan, president of the Cotton-Textile Institute, stated:

"We regard these high percentages of support for the night work recommendation as a magnificent tribute to our industry and a strikng example of the determination of cotton mill executives to preserve and expand the gains so far made through constructive co-operation. During the past year there has been a pronounced tendency toward concentration of cotton mill operations, so far as possible, on the day shift with a resulting stabilizing influence on employment for men and women alike. It is significant that during 1931 Government reports indicate a more uniform rate of cotton consumption from month to month than at any time during the past ten years.

"I am hopeful that the support for this night work recommendation will grow into universal observance. In this way our cotton mills from Maine to Texas can play an important part in the present nationwide effort to restore confidence in business."

The question of this reform has been advocated for many years within the industry but has received its greatest impetus during the past two years. In the fall of 1928 an effort was made to amend the by-laws of the Cotton-Textile Institute by removing the restriction on its taking active part in legislative and political matters so that it could take the initiative in the effort to accomplish this reform through legislation. But the membership preferred to retain the prohibition on the Institute taking any part respecting legislative and political matters. In the early part of 1930, however, the plan for the Institute to propose voluntary action took definite shape following a conference with Government officials at Washington. The first outcome of this conference was the suggestion of leading mill executives to the industry to establish greater uniformity in running time for labor and machinery and to make the night shift shorter than the day shift. Very important progress has been made in securing these results.

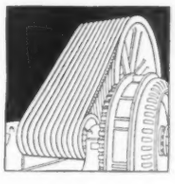
In the summer of 1930 there developed an increased conviction that night employment of women and minors be entirely eliminated and this paved the way for the present recommendation

# *We've got to* CUT *our overhead*

"And one way to cut overhead is to use more efficient equipment. Now, take this question of drives—belt upkeep, repairs and replacements . . ."

There's no better place to start. For proof is abundant that Dayton Cog-Belt Drives DO cut overhead to an astonishing degree. We can tell you of one plant, for example, where Dayton Cog-Belt Drives saved more than $10,000 a year; of another where they increased production more than 10%; of another where they released floor space for more machines and saved the expense of a new building.

And the reasons are simple. First, with Dayton Cog-Belt Drives, *replacements are reduced often more than half.* That's because Dayton Cog-Belts are "built to bend." Their exclusive and patented cog construction makes them far *more flexible.* Nor do they stretch. For their powerful "neutral axis" is built up under tremendous tension and all stretch removed. And they're *die-cut—not molded.* They provide a raw-edge contact surface, giving greater gripping power. And the cross-wise rigidity of Dayton Cog-Belts positively prevents distortion. They fit the pulley grooves *accurately* . . . no slipping, sliding, twisting or heating.



All this means longer belt life—lower maintenance expense. It means smaller pulleys . . . shorter centers . . . less floorspace. It means smoother starting and running . . . positive speeds. It means less lost time . . . greater production. It means many more advantages we'd like to tell you about. May we not send you ALL the facts? A line or a wire will bring them to you—without obligating you in any way.

**THE DAYTON RUBBER MFG. CO.**
**DAYTON, OHIO**

*Factory Distributors in Principal Cities and all Westinghouse Electric and Mfg. Co. Sales Offices*

**Dayton**
**COG-BELT DRIVES**

which has been observed since March 1, 1931, by a preponderant part of the mills. However, the continued effectiveness of the movement was dependent upon the pursuance of the policy, after March 1, 1932, by 80 per cent of the spindles including a corresponding percentage of the night runners. Thus it will be seen from this announcement that these percentages of voluntary support have been reached and exceeded.

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### Southern Textile Association to Meet at Hendersonville, N. C., on June 24th and 25th.

Definite announcement has been made by Walter C. Taylor, secretary, that the 24th annual meeting of the Southern Textile Association will be held at Hendersonville, N. C., on Friday and Saturday, June 24th and 25th. W. M. Sherard, mayor of Hendersonville, is a past-president of the Association, and promises the full co-operation and support of the city, together with its various organizations, for this occasion, Mr. Taylor states.

It is further announced that in planning for the meeting, the Association will endeavor to get everyone attending to wear cotton clothing, and it is quite possible that this year more stress will be laid on cotton for men's wear than ever before.

:: :: ::

### Plans Shaping Up for American Ass'n. Meeting in Atlanta May 20-21.

While no program details were availablel at press time for this issue, it is understood that plans for the annual convention of the American Cotton Manufacturers' Association, to be held at the Atlanta-Biltmore Hotel, Atlanta, Ga., on Friday and Saturday, May 20th and 21st, include a number of features of unusual interest. Definite information will be released shortly.

Coming at the conclusion of National Cotton Week (May 16th to 21st) inclusive, the meeting will take on added interest and importance. A large attendance from all over the South, with visitors from New England, is anticipated. Cason J. Callaway, of LaGrange, is president.

:: :: ::

### N. C. State College Installs New Variable Drive on Loom.

Reeves Pulley Co., Columbus, Indiana, have installed in the textile school of N. C. State College, Raleigh, N. C., the first Reeves variable speed transmission ever applied to a loom, a school announcement state. This transmission is a self-contained unit which receives power at a constant speed from a motor and transmits it to the loom at adjustable speeds between predetermined minimum and maximum limits. The unit will regulate the speed of the loom with accuracy, the announcement states. Each change from one speed to another, when desired, is effected swiftly and smoothly; there are no steps or jumps, or change of gears, in changing from one speed to another.

Several months ago this company also installed in the textile school a Reeves variable speed transmission applied to a spinning frame.

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### Atlanta Office of Universal Moved to the Norris Building.

The Atlanta office of the Universal Winding Company, formerly located in the Candler Building, has been removed to 807 Norris Building. The telephone is Walnut 5192. Jesse W. Stribling is Atlanta agent for the company.

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### A. French Textile School at Georgia Tech Adds New Equipment.

The Textile School of the Georgia School of Technology, Atlanta, Ga., has recently completed the installation of new equipment in two departments, which will materially widen the scope of the work being done by the students. The weaving department has received a new Jacquard head from Thomas Halton's Sons. The head is thirteen hundred hook, fine index, single cylinder type. It is arranged with a straight tie over a 36-inch 4x1 box loom. It will be a valuable addition to the Jacquard division, and will play an important part in this work, a feature of which during the past two years has been the weaving of Christmas greetings mailed to alumni.

The dyeing department has recently installed two dye vats lined with Monel metal, which are particularly useful in dyeing rayon and other synthetic fibers in the form of skeins; these vats have proven most satisfactory in dyeing with any type of dye, it is stated.

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### Courses in Cotton Grading and Cotton Testing at Clemson.

The textile department of Clemson College, in co-operation with the U. S. Department of Agriculture, will conduct a special course in cotton grading beginning June 6th and continuing through July 2nd. The classes will be taught by a specialist in cotton grading from the Department of Agriculture. The students in this course will have the opportunity to inspect grades and staples of some 5,000 cotton samples selected from different sections of the cotton belt.

In conjunction with this course, H. H. Willis, director of the Clemson textile department, will offer an intensive course in the testing of cottons, yarns, and fabrics. This should be of especial interest to overseers, superintendents, or those in charge of mill testing laboratories. Those interested in either or both of these courses should address H. H. Willis, director, textile department, Clemson College, S. C.

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### Leather Belting is Now Sold by Thickness Instead of Ounces Per Sq. Ft.

Of interest to textile mills is the recent announcement that the American Leather Belting Association has decided that for the greater protection of the consumers of leather belting, it should establish and sell this commodity by specifications of thickness instead of weight, thereby discarding the old weight terminology of "ounces per square foot" which may be varied by the mere addition of weighting materials to the leather, and does not necessarily always represent a differential in transmission values. This decision was reached after the Association had canvassed all manufacturers of belting throughout the country, with the result that 81 replies were received, all voting for the change; therefore, the movement may be considered as having the endorsement of the entire industry, the announcement states.

The announcement continues: "This is an interesting and progressive move for the purpose of establishing higher standards for a product that has been sold by weight for many years. Inasmuch as leather belting prices are based on thickness, the simplicity and common sense of this change has met with the instant approval of both manufacturers and users of leather belting. It simplifies and makes comparatively easy the checking of each piece of belting to see if the average thickness is as ordered."

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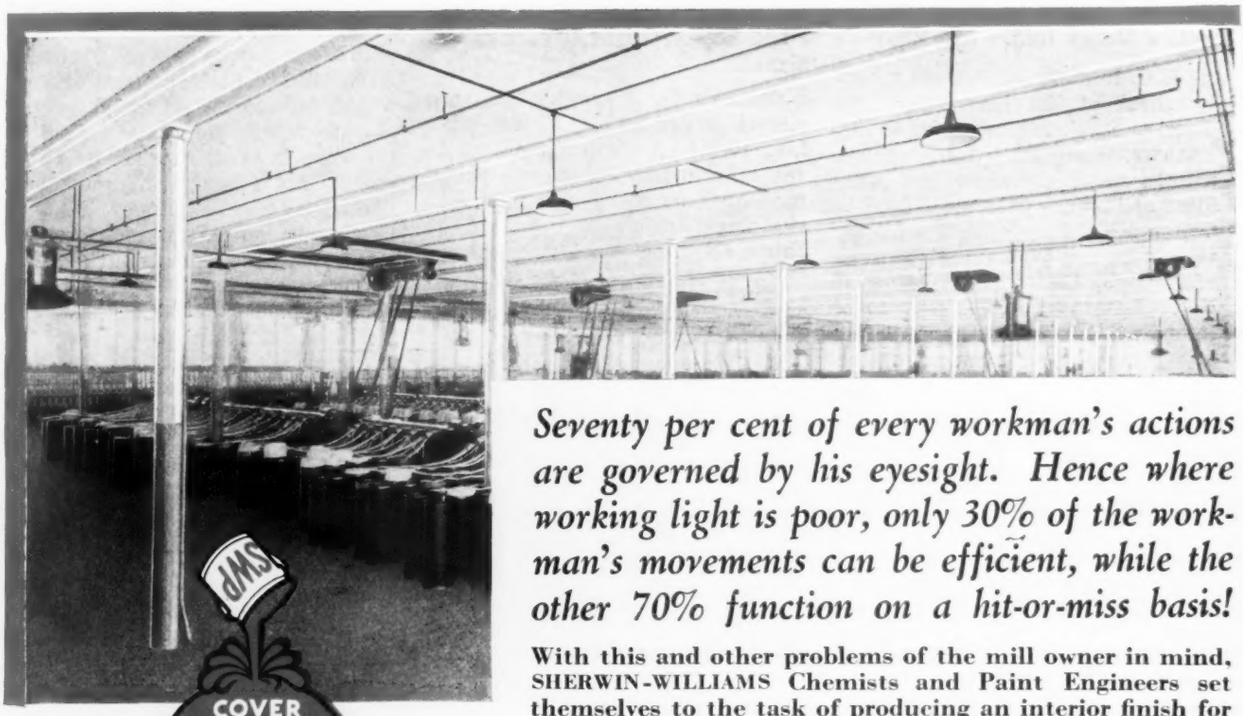
### Multiple "V" Belt Patent Suit Settled.

Notice is being sent to the trade generally by The Dayton Rubber Mfg. Co., of Milwaukee, Wis., that the suit of The Dayton Rubber Mfg. Co. against Allis-Chalmers Mfg. Co., in United States District Court at Cincinnati, involving patent infringement of Allis-Chalmers Geist patent No. 1,662,511, pertaining to Multiple "V" Belt Drives, has been settled out of court by the contending parties effecting a mutually satisfactory commercial working arrangement, under which Dayton takes a license under the Geist patent No. 1,662,511, and Allis-Chalmers has the right to operate under Short patent No. 1,538,303, if it so desires.

# 30% to 50% MORE WORKING LIGHT

## . . . at no extra cost




*Seventy per cent of every workman's actions are governed by his eyesight. Hence where working light is poor, only 30% of the workman's movements can be efficient, while the other 70% function on a hit-or-miss basis!*

**With this and other problems of the mill owner in mind, SHERWIN-WILLIAMS Chemists and Paint Engineers set themselves to the task of producing an interior finish for manufacturing plants, mills, etc. that would not only retard property depreciation, but would also conserve and use the rays of incoming light, natural or artificial, in the most efficient way.**

**SAVE-LITE Finishes are the result. They are white interior finishes which *softly diffuse the light into every portion and corner of the room*. They increase production by giving this better working light, which in turn reduces loss through spoilage and accident, and improves morale among workmen.**

**Many of America's largest and finest textile mills are now using SAVE-LITE interior finishes. Their names will be furnished upon request, along with specific information about SAVE-LITE Finishes and the *S-W Paint Standardization* Plan, which *is saving* textile mill owners thousands of dollars. Write The Sherwin-Williams Company, Department 729, Cleveland, Ohio.**

***Developed and thoroughly* proved *by the practically unlimited resources of the world's largest manufacturers of protective finishes,* SHERWIN-WILLIAMS SAVE-LITE *Finishes actually accomplish for the mill owner what no ordinary paint can do. In addition to* increasing light *from 30% to 50%, they* cost less *because fewer gallons are required to cover . . .* last longer *and* look better. *Manufactured in three degrees of gloss—Eg-Shel White, Gloss White and Flat White.***

**NOTE:** *Our offices in Philadelphia, Charlotte, Atlanta and 247 East Main Street, Spartanburg, S. C., are maintained for the convenience of mill owners and operators in these sections.*

# SHERWIN-WILLIAMS SAVE-LITE

# NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

STONEY DRAKE has resigned as agent of the Clark Thread Company plant at Austell, Ga., and has been succeeded by WILLIAM BELDEN, formerly at the company's plants in Newark, N. J. The change was effective March 15th.

L. O. BUNTON has become superintendent of the Riverdale Mills, Enoree, S. C., succeeding A. D. ELLIOTT, resigned. Until several months ago, Mr. Bunton was president and manager of the Avondale Cotton Mills, Humboldt, Tenn. Previously he had been superintendent of the Ruby Cotton Mills, Gastonia, N. C. LAWTON P. DUNCAN, superintendent, Inman (S.C.) Mills, is also general superintendent of the Riverdale Mills. JAMES A. CHAPMAN, JR., is vice-president of both mills.

R. M. ROSS, overseer of carding, Clyde Fabrics, Inc., Newton, N. C., will also have charge of spinning, spooling and warping.

F. B. POLLARD recently became connected with the Gossett Mills, Anderson, S. C. He is a graduate of the Clemson College Textile department, class of 1931.

J. P. GARRISON has been made designer at the Pilot Mills Co., Raleigh, N. C. He was graduated from the North Carolina State College textile school last June.

SAM G. RILEY, a graduate of the North Carolina State College textile school, has been made specification division manager for Plant E of the Collins and Aikman Corporation, Roxboro, N. C.

ROWELL R. DORSETT has been named by the Calco Chemical Company as representative in North Carolina. He was formerly connected with the Royce Chemical Company. His headquarters are at Charlotte, N. C.

R. F. BAYNES, formerly in charge of twisting at the Collins and Aikman Corporation's mill in Roxboro, N. C., is now foreman of plush weaving in this plant. He is a graduate of the North Carolina State College textile school.

HARRY S. ADAMS has become assistant treasurer of the Aragon-Baldwin Mills, Chester, S. C. For many years he has been secretary and treasurer of the Eureka Cotton Mills of Chester. In his new position he succeeds E. R. LUCAS, resigned.

GRAHAM H. ANTHONY has been elected president of Veeder-Root, Inc., Hartford, Conn., manufacturers of counters for textile mills. Mr. Anthony, who was formerly vice-president, is a graduate of North Carolina State College.

A. S. GRIFFIN has become general overseer of spinning, spooling and twisting at the Cherry Cotton Mills, Florence, Ala.

Mr. Gulick.

Mr. Wechsler.

CHARLES P. GULICK has been made president of the National Oil Products Company, Harrison, N. J., succeeding M. A. RICHARDS, who has retired because of ill health and now holds an honorary position as chairman of the board. Mr. Gulick was one of the founders of the company, and formerly held the position of treasurer and general sales manager. He was recently elected first president of the Sulphonated Oil Manufacturers Association, a national trade body. RALPH WECHSLER succeeds Mr. Gulick as treasurer, and Albert A. Vetter was elected a member of the board of directors.

W. T. BROWN, who recently resigned as overseer of weaving at the Nokomis Cotton Mills, Lexington, N. C., has been succeeded there by T. W. Anderson.

W. B. GRIER has become overseer of carding and spinning at the Franklin Cotton Mills, Grier, S. C.

A. E. BARNEYCASTLE has become overseer of carding at the Eno Cotton Mills, Hillsboro, N. C.

### Obituary.

WILLIAM A. ERWIN, president of The Erwin Cotton Mills Co., with headquarters in West Durham, N. C., and plants there and at Erwin and Cooleemee, N. C., and head of other textile enterprises, died at his home in West Durham on February 28th, following a protracted illness. He was 75 years of age. Mr. Erwin was one of the pioneers in southern textile manufacturing, beginning more than 50 years ago as secretary and treasurer of the E. M. Holt Plaid Mills at Burlington. He organized the Erwin Cotton Mills Co. in 1893. He was active in other textile interests in North Carolina and New York City, and served two terms as president of the American Cotton Manufacturers Association, from 1912 to 1914.

WILLIAM ENTWISTLE, 87 years of age, president of the Entwistle Mfg. Co., Rockingham, N. C., where he had been associated with mills since 1878, died recently. Mr. Entwistle was born in Lancashire, England, and came to the United States while a young man, locating first in New England and removing to Rockingham more than 60 years ago.

JACOB ELSAS, founder and head of the Fulton Bag & Cotton Mills, Atlanta, Ga., passed away, at the age of 89 years, on Saturday, March 5th. Mr. Elsas, who had retired as president of the corporation some years ago, continued an active interest in its affairs until his death, having just made a business trip several days prior to his sudden fatal illness.

JOHN W. COLE, overseer of carding and spinning at the Opp (Ala.) Cotton Mills, and son of C. H. COLE, manager of the plant, died on March 6th following an illness of pneumonia. He was 26 years of age, and is survived by his parents, a sister, and three brothers, BARNEY and MARTIN COLE, of Opp, and SAM COLE, of Aliceville, Ala.

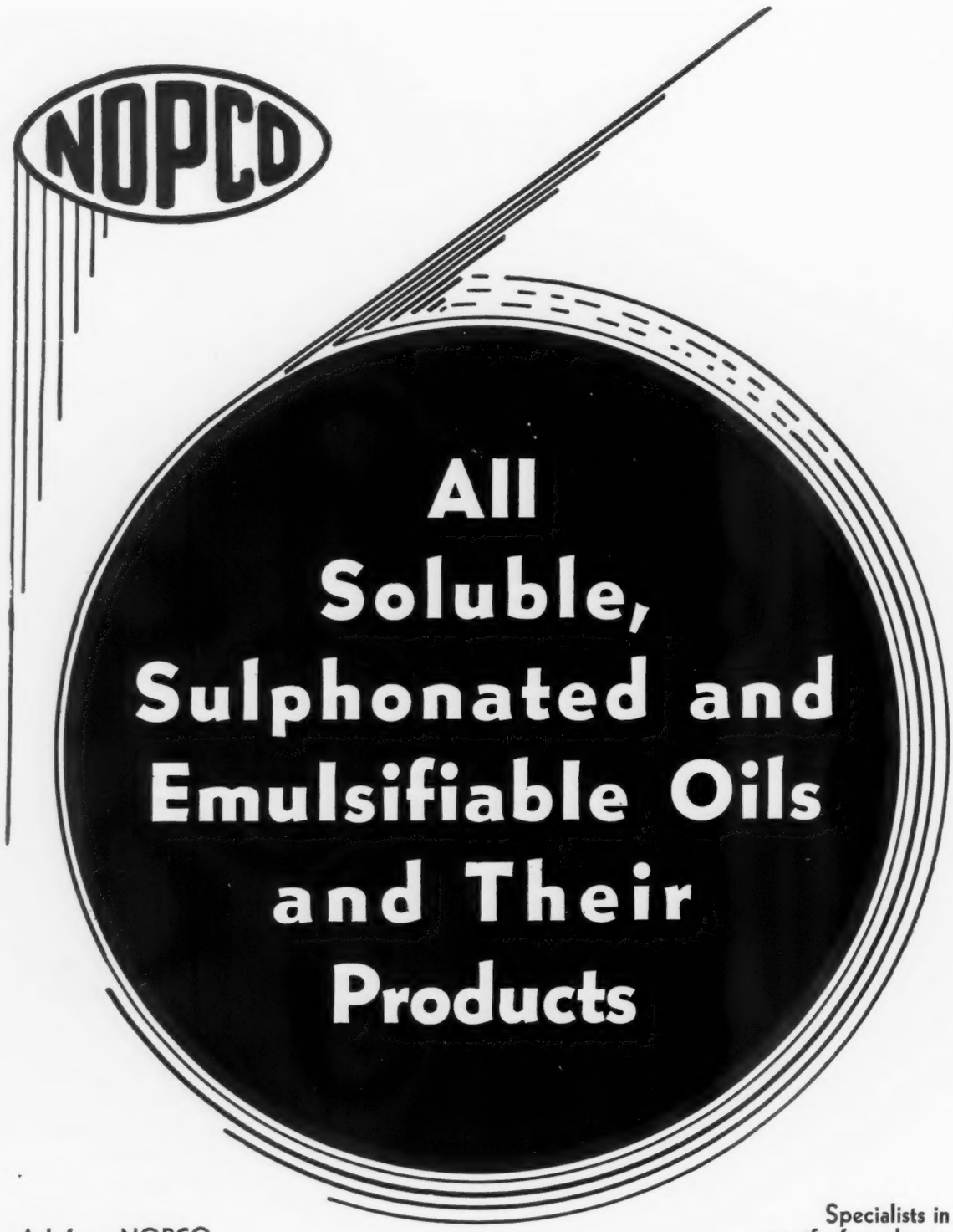
# BY HAND OR BY MACHINE?

The winding operation on Barber-Colman *Automatic* Spoolers is an almost entirely mechanical process as contrasted with other winding systems in which hand work predominates. This means that uniformly high quality work can be produced consistently *with a minimum of supervision*—a desirable result which cannot be accomplished where much hand work is a part of the operation. Manual winding introduces the faults and errors inherent to such operations; winding by automatic machine insures maintenance of the desired standard. When, in addition, winding can be done by machine *at a much lower cost*, as with Barber-Colman *Automatic* Spoolers, it becomes of vital importance for serious consideration by every mill executive.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS

FRAMINGHAM, MASSACHUSETTS GREENVILLE, SOUTH CAROLINA

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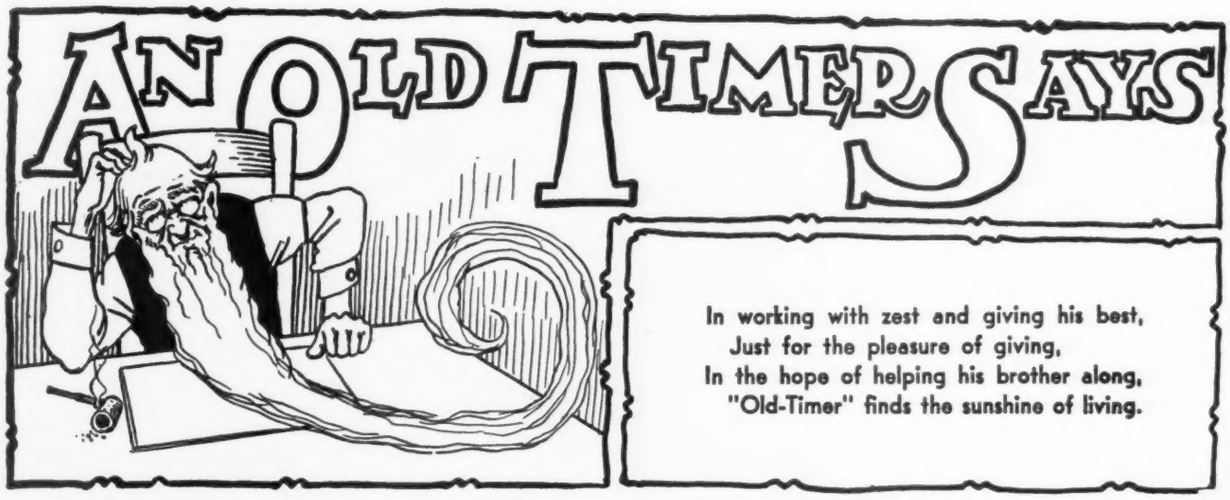

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# The Story of Old Timer's Methods of Working and Management

Part Three—Continued from March Issue

**LAST month, Old-Timer finished telling Jim how he learned to fix looms and how the lessons learned in doing so started the development of an inspection and maintenance system which was applied to everything about the mill.**

**In the present installment, he starts in the opening room and picker room and shows Jim how the system really works by giving him examples. You are urged to study this description carefully. Later installments will continue the description of applying the idea to the other departments of the mill.**

**And don't forget to save your copies of these articles for later use . . . . . .**

(Note: Since this series is written in conversational style, it should be borne in mind that those paragraphs in *italics* represent Jim's part of the conversation, and those in regular type are Old-Timer's part.)

(Continued from March Issue.)

*Say,* OLD-TIMER, *who was that man from Tennessee who had been reading your page several years and slipped in on you one day to see if you "practiced what you preached", then went back home and wrote to your editor about your showing him through the mill and all about the system your overseers used to keep in touch with their work? That article he wrote sounded something like this loom-fixing business you have been explaining to me.*

Well, yes, JIM, it is the same system. In fact, it makes it so easy for an overseer to prevent any one thing being neglected in his room, that I have recommended it to all overseers. There is so much satisfaction in knowing that there is nothing you have forgotten to look after or check up on.

*Sure,* OLD-TIMER, *if I had known about this system when I was made superintendent, even though I am a carder, those darn rocker shaft bearings would never have worn completely out and caused hundreds upon hundreds of break-outs, or helped to cause them, before I found it out.*

No, JIM, and those batteries and stop motions would not have been in the fix they were the first time I saw them in your mill.

*How about giving me a copy of the record you keep in the different departments,* OLD-TIMER, *so I can show my men?*

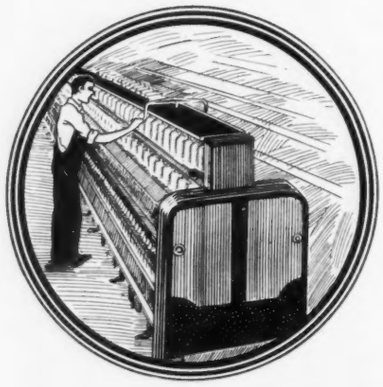
O. K., JIM, but of course our records of inspection may not exactly suit your local conditions, but you can form your own ideas after looking them over and fix up your system to suit your ideas and conditions.

Here is the carding department. You see we have just an ordinary card system, that is, a blank card on which to enter the subject or title of the item to be inspected and the date of the inspection.

The overseer can, by glancing through the record, see the items which should next need attention, and by starting the system with only the items he can think of that need an overseer's attention, then every time something comes up in that department which he decides should not be forgotten and should have attention once a week, month or year, if he will enter it on the card, it will forever afterward be given attention, providing, of course, that he does not neglect his system.

The actual size of the cards, of which some samples are illustrated in Fig. 3, is 3 x 5 inches, and may be secured from most any book store. The "master" cards have the tabs, or projections, on them, which separate the different departments or processes or

THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE



# DO YOU ACTUALLY KNOW THE CRITICAL POINT IN YOUR EMPLOYEES' *Productivity?*

All workmen are not alike. Some are fast and some are slow; some are skilled and some are less so; some are gluttons for work while others slight their jobs.

All employees are individual problems. Do you know exactly what these problems are? Are you overworking some men to make up losses on others? Perhaps you have thrown up your hands in disgust and said it can't be done with fairness to all.

But THERE IS A WAY TO MEASURE HUMAN ENDEAVOR. And it is fair to both the workmen and you. It is simple to apply. It is efficient. It saves thousands of dollars per annum for you. It puts more money in the employees' pockets. It increases production.

THE BEDAUX PRINCIPLE OF LABOR MEASUREMENT establishes a base rate on every job—not on the individual. It gives the workers much satisfaction because they know individual rates are not subject to revision. They know just exactly what is expected of them and accomplish it for their basic wages. They are also allowed a premium for better than average work.

No plant alterations or new equipment are required to establish Bedaux in your plant. The sum you invest is exceedingly small in proportion to the returns.

You will find much information in our new booklet, "Bedaux Measures Labor." It is free for the asking.

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30 Camden Road, Atlanta, Ga.

THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE

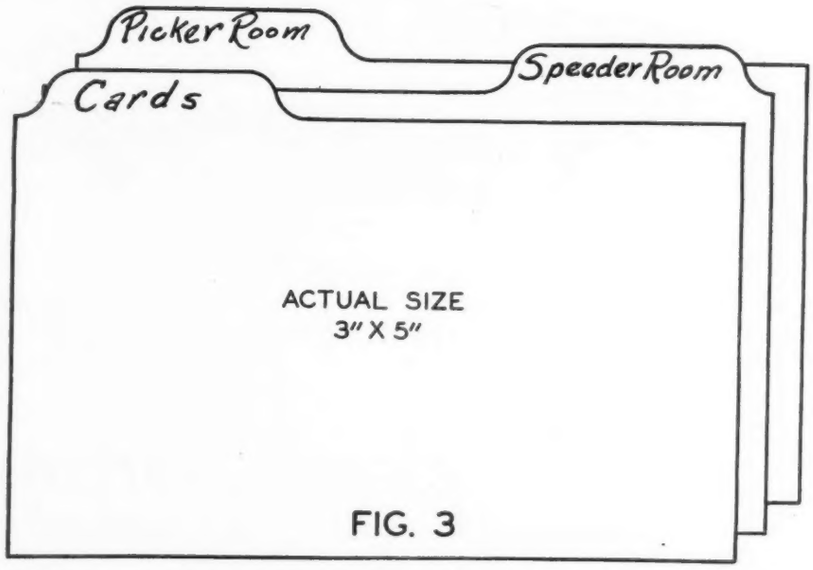



FIG. 3

The illustration at the left shows sample "master cards" for the "check-up" and record system explained here by Old-Timer. As pointed out, the actual size of these cards is the regular 3x5 inches. The following illustrations of cards (reduced for the sake of space) also are actually 3x5 inches to be filed between these master cards . . . . . .

machines or any way you care to arrange the system.

An actual reproduction of one of the cards taken from the picker room file is shown in Fig. 4. This of course shows that motes were inspected on the different date placed on this card in pencil.

Thus the dates are entered until the card is filled; then, simply enter a new card and also keep the old card for reference.

By the way, JIM, do you recognize that writing, or printing, rather, at the top of that card.

*Sure I do,* OLD-TIMER. *That looks very much like you did it, but I don't understand. Did you keep that record?*

No, JIM, but I made out that card for a young man when he took charge of a card room. Today he is a successful superintendent of one of the best mills in the South. When you asked to see my records I went

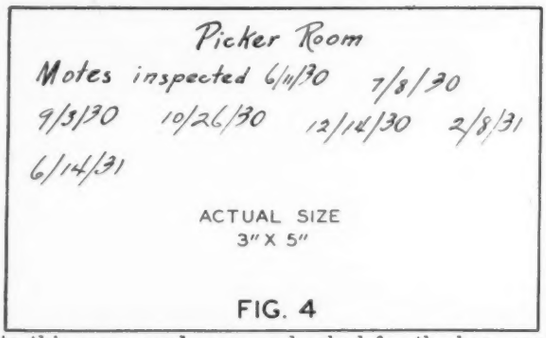



FIG. 4

into this same card room and asked for the boss carder's record, and I now realize that is the card I made out for the man referred to previously, and the system therefore is being faithfully kept up by the present overseer who was his second hand and was promoted to the overseer's job when he left.

But we are getting away from the subject. Let's get back to a further explanation of the system.

*O. K.,* OLD-TIMER. *What do you mean by "motes inspected"?*

Well, JIM, as I have explained to you before, the overseer simply would notify the man who takes motes from under the pickers to drag them out on the floor, but not to take them away. Then all the overseer had to do was to walk along and look at each pile.

Naturally, a pile with too much white cotton or too little white cotton would indicate to the overseer that he must inspect that machine and have the grids adjusted.

The next card (Fig. 5) shows for its heading, Weigh Laps.

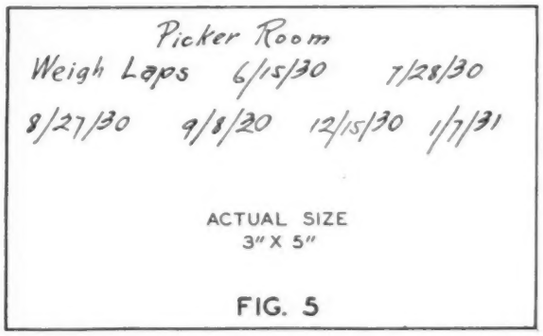



FIG. 5

This shows the dates that the overseer went into the picker room and actually weighed some laps himself.

Yeah, I heard you before you spoke, JIM. You were going to say that from 9/8/30 to 12/15/30 is a pretty long time for an overseer to go without weighing some laps, so I will just ask you: When did *you* weigh any laps, JIM?

*Oh, not long ago. I watch my picker room pretty close,* OLD-TIMER. *We have got one of those things that tells you how much water—*

Wait a minute, JIM. I asked you *when you weighed any laps.*

*And I told you: not long ago.*

Yes, but how long is "not long ago"? Did you weigh any laps last week?

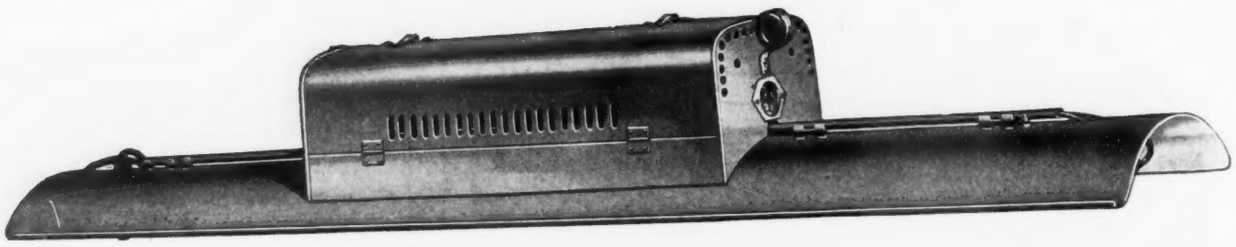
*No.*

Did you weigh any laps week before last?

*Say, what you trying to do; get smart, or something?*

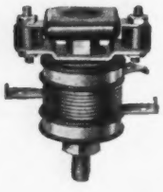
No, certainly not, JIM, but I am trying to show you the good of the system.

If I ask my carder when he last weighed some laps

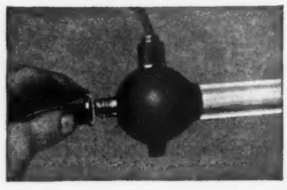


# The New COOPER HEWITT LAMP is Quicker Starting

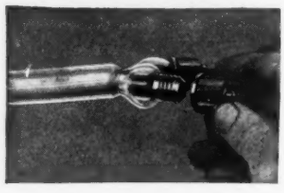
By the introduction of a new electrical circuit which includes a newly invented copper oxide rectifier, the new and improved Cooper Hewitt Lamp starts more quickly than any previous A. C. model. This new circuit, developed by General Electric Vapor Lamp Company engineers, now supplies direct current for the shifter action so arranged as to be always of the correct polarity for starting the lamp. What this invention means is readily understood when it is remembered that starting is accomplished by the interruption of the line current through an inductance coil and, until now, half of the shifter cycles of the alternating current occurred on the wrong polarity. Now every operation of the shifter is correct for lamp starting—twice as fast as was heretofore possible.



Many other improvements, including a new style, straight line tube with screw terminals attachable by hand, make this new model lamp the finest industrial lighting unit ever produced. Write for Catalog 505 for complete details.



*Pictures show ease of attaching new insulated screw base terminals.*



*Generally speaking, the best lighting costs no more than 1¢ per hour per man. A properly engineered Cooper Hewitt lighting installation will sufficiently reduce spoilage and save enough of an operative's time to offset the small additional cost of the best lighting. Try Cooper Hewitts in your own plant now.*

GENERAL ELECTRIC VAPOR LAMP CO.
853 Adams Street . . . . . Hoboken, N. J.

**Cooper Hewitt Light is Better than Daylight**

GENERAL ELECTRIC VAPOR LAMP COMPANY

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he can tell me the exact day, and *I know it has been done.*

And I also know he cannot forget to weigh laps again in the near future. While I can tell you of some things in your card room that you have not looked at in a year, and probably will never look at again until something goes wrong to call your attention to them.

This system will cause you to look at the item *before* something goes wrong.

*Well now, Mr. Smart Aleck, just tell me something I have not looked at in a year.*

Will you tell the truth, JIM, if I ask you a question?

*Say ? * X — ! ? * / ?*

All right! All right! Shut up, for goodness' sake!

Now, when have you actually gone to your pickers and examined the safety devices on the beaters?

Don't answer, JIM. Suppose we just go look ourselves.

(About ten minutes to walk down to the picker room. Meantime, JIM has turned a little red in the face and has taken three bites off of his plug of tobacco, seeming to forget each time that he had already taken a chew.)

*Just my luck,* OLD-TIMER. *That one has got that little pig tail broken off, hasn't it?*

*Hey, you!*

Wait, JIM, don't bawl that poor fellow out. Let's go back to your office and start the system . . . The next card (Fig. 6.) shows Creeling.

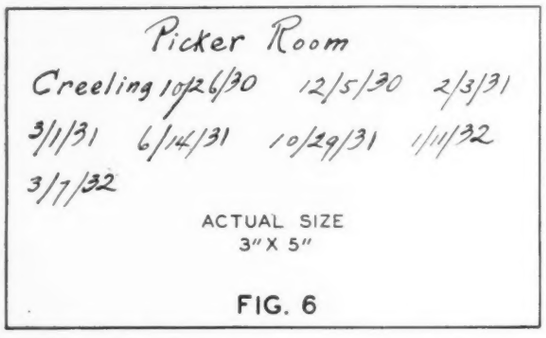



FIG. 6

*Creeling? You mean laying the laps down on the aprons, don't you,* OLD-TIMER?

Certainly, JIM.

*Well, how in the dickens is a man going to inspect laying laps on an apron? What is there to inspect?*

JIM, if you will stand around in your picker room awhile and watch the men you will very likely see many things you can improve on. I remember distinctly on one of my inspections I noticed that the laps they were putting on the aprons were badly torn up, and it was difficult for the operator to get the lap started off correctly.

I found the trouble was in having such a large stock of laps between breakers and finishers that it caused them to get so much rough handling, and we found it was better not to pile up so many laps between the machines.

This next card (Fig. 7) is merely a record of sharpening beaters that the overseer can look at any

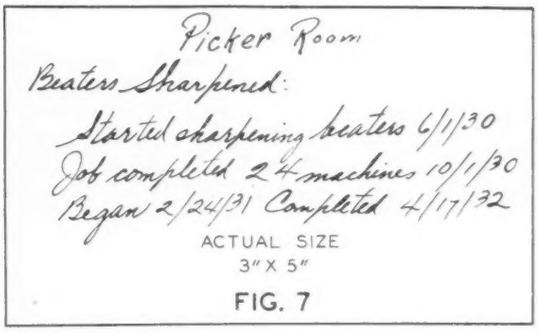



FIG. 7

time and decide when they should be inspected again.

And here is the card with a record of inspection of the safety devices.

*Just pass on to the next card,* OLD-TIMER. *I've had enough of that one.*

O. K., JIM. Here is the next one. It has fire equipment for its heading, and the overseer goes over the chemical extinguishers and all the hose, etc., about every two months, just like an insurance inspector would. That is why we get such a good report when the fire insurance man does come around.

This next one (Fig. 8) is not an inspection card, but we have found that it is so easy to make a record of these things, and the information does come in good sometimes. For example, I see on this same card where we used a fabric belt instead of single leather belt in repairing an apron.

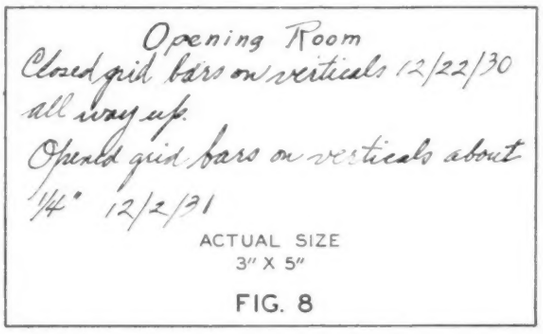



FIG. 8

Naturally, we want to know which is the best, which will last the longest and what each costs. By keeping such a record we will not have to go by what we *think,* or what some salesman says. We will *know.*

And here is also a record of some evener belts:

2 leather evener belts put on No. 6 and No. 7 finers 12/8/30.

2 canvas evener belts put on No. 4 and No. 5 finishers 12/8/25.

No. 6 broke 6/18/31, practically six months run.

No. 5 broke 11/11/31, practically eleven months run.

No. 4 broke 11/28/31, practically eleven months' run.

No. 7 broke 12/22/31, practically twelve months' run, and other records of evener belts are given, but this is enough to show the system without taking up too much space.

Say, do you know how long an evener belt should last, JIM?

You see, No. 6 belt only ran about six months, which shows there was something wrong, because the

# The FACTS ABOUT SECOND HAND HEDDLES

Naturally, in these days of turmoil, many are blinded by "low price," seldom realizing that the cheapest first cost is invariably the highest in the end.

Statistics have proven the Second Hand Heddles more expensive than new Heddles, for the following reasons:

1st: The buyer has no way of definitely measuring the length of time the heddle has been used, or the type or warp thread to which it has been subjected.

2nd: Unlike in years past, today there is a heddle best suited to each warp thread, and unless you buy the exact type best suited, you cannot meet competition.

3rd: Even with the Heddles mounted on rods the line-up is never correct and particularly on Duplex Heddles where an alternating effect is of utmost importance to obtain proper results in entering and at minimum cost. Remember:—New Heddles come conveniently arranged for instant use, requiring positively no additional mounting costs.

4th: Second hand heddles may be mixed—some old—some new—some one type—some another—all of which means production suicide.

These are but a few of many reasons why you should demand the new, latest designed heddles as made by

Southern Plant
621 E. McBee Ave.
Greenville, S. C.

Steel Heddle Mfg. Co.

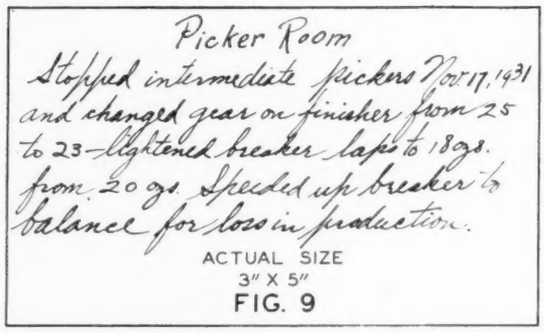
New England Office
44 Franklin St.
Providence, R. I.

A definite heddle for every different warp thread

2100 W. Allegheny Ave.
PHILADELPHIA, PA.

Foreign Offices
Huddersfield, England
Shanghai, China

A contrast in shipping methods. New flat steel heddles are counted and shipped on bars ready for transfer to the harness without counting.


Picker Room
Stopped intermediate pickers Nov. 17, 1931
and changed gear on finisher from 25
to 23—lightened breaker laps to 18 ozs.
from 20 ozs. Speeded up breaker to
balance for loss in production.

ACTUAL SIZE
3" X 5"
FIG. 9

others averaged practically double that length of time.

Now, let's look at the next card (Fig. 9), which covers changes on the pickers. When you make such changes in the mill, JIM, you should always make a record of them. It is not only a source of satisfaction to have the information, but it is very valuable, and, above all, it shows the overseer is capable of giving you any information you may call for at any time concerning the operation of his department. It stamps him as an up-to-date overseer. You know, it is really surprising to find out how little the average overseer, and many superintendents, know about the details of the job.

They seem to think they can carry everything in their heads, until you ask them something, and then they get terribly embarrassed, and say, "Wait a minute, I'll go find out."

(And so, having gotten through examples of how the system works in the picker room, we must leave Old-Timer and Jim for this time. In the fourth installment, to appear in an early issue, they continue the discussion and description of this system, as it is applied in the card room. This will be continued until the entire mill and its adjuncts are covered.

Many readers have given us their opinion of this material. We would deeply appreciate hearing from you. And, don't forget to file away the copies of COTTON carrying this series, or else clip these pages out, for we can assure you that before the series is finished you will want to have every installment, and at the time we may not be able to furnish extra copies of back issues.—The Editor.)

## Phi Psi Textile Fraternity to Meet at Blowing Rock, May 13, 14, and 15.

Announcement has been made that the annual national convention of Phi Psi Fraternity, which is the largest textile fraternity, will be held at Blowing Rock, N. C., on Friday, Saturday and Sunday, May 13th, 14th and 15th. Headquarters will be at the Green Park Hotel.

Arthur R. Thompson, Jr., superintendent, North Carolina Finishing Company, Yadkin, N. C., near Salisbury, is grand president of the organization, which has approximately 1,500 members in the textile industry, including active members in chapters in eight textile schools and alumni and honorary members in various branches of the textile manufacturing and allied industries throughout the country. The active chapters are: Alpha, Philadelphia Textile School, Philadelphia; Beta, New Bedford (Mass.) Textile School; Gamma, Lowell (Mass.) Textile Institute; Delta, Bradford Durfee Textile School, Fall River; Eta, North Carolina State College, Raleigh; Theta, Georgia School of Technology, Atlanta; Iota, Clemson College, S. C.; and Kappa, Texas Technological School, Lubbock, Texas.

Delegates from all of these active school chapters will attend the meeting, and a large number of alumni and honorary members from various parts of the country will also be present.

J. V. Killheffer, of E. I. du Pont De Nemours & Co., Charlotte, is general chairman of the program for the meeting. Parker H. DelPlaine, of Rohm & Haas, Charlotte, and J. W. Ivey, of Mathieson Alkali Works, Inc., Charlotte will be in charge of transportation; and F. W. Warrington, of W. A. Kennedy & Co., Charlotte, is chairman of the entertainment committee. Aug. W. Smith, Jr., Brandon Mills, Greenville, S. C., who is grand secretary of the national organization and William G. Blair, are in charge of registration. Housing will be handled by Grand President Thompson and Otis P. Mills.

The convention will open with an informal session for registration on Friday evening, May 13th. On Saturday morning, May 14th, the general and executive sessions will be held, with a golf tournament and other entertainment arranged for Saturday afternoon. The annual banquet will be held on Saturday evening, with special entertainment and addresses by prominent members. Sunday, May 15th, will be devoted to sight-seeing, etc.

Details of the program will be announced later. Information concerning railroad schedules, etc., may be secured from Parker H. Delplaine, Independence Building, Charlotte, N. C.

:: :: ::

## Miss Coltrane Joins Staff of "The Carolinas" Magazine.

The textile industry of North and South Carolina will be interested in the fact that Miss Jenn W. Coltrane, of Concord, N. C., has assumed the post of director of textiles publicity for the new magazine—The Carolinas. As the daughter of a large cotton manufacturer, Miss Coltrane has been literally raised in an atmosphere of cotton manufacturing, and as a writer on mill conditions and social welfare work her articles have attracted wide attention.

The textile pageant staged by Miss Coltrane about a year ago in Concord was a stupendous success. "Not a single manufacturer, North or South, of all I visited, hesitated to give me immediate and unstinted support," said Miss Coltrane, "and I feel that this magazine offers a medium through which we can all throw that same spirit of co-operation, for the spirit of success takes root in co-operation."

One feature of the new magazine that particularly appeals to Miss Coltrane, and influenced her in accepting the post, is the fact that it will be mailed to every high school in the two Carolinas, thus reaching more than 100,000 children attending public schools. Already a hundred or more high school superintendents have asked that the magazine be furnished them for reference work, and many have pledged themselves to set aside a classroom period to study the resources and opportunities to be found in the two states. "From these young and plastic minds," said Miss Coltrane, "will come our future leaders in commerce, industry, agriculture, invention and thought."

Miss Coltrane has already assumed active charge of the textile publicity for the magazine, and she expects at an early date to announce her Advisory Associates, who will be men of National prominence. Among those invited are Dr. Julius Klein, of the U. S. Bureau of Commerce, President Geo. A. Sloan of the Cotton Textile Institute, E. L. Starr of the Durene Association, Walter S. Brewster, president of the Association of Cotton Textile Merchants of New York, W. S. Nicholson, president of the South Carolina Cotton Manufacturers Association, Kemp Lewis, president of the North Carolina Cotton Manufacturers Association, Donald Comer, vice president for Industries of the Southeastern Economic Council, and Cason J. Callaway, president of the American Cotton Manufacturers Association, and M. D. C. Crawford, The Fairchilds Publications, New York.

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# HOW OTHER MEN MANAGE

## Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

### More Experiences as to Effect of Different Size Top Rolls on Yarn Number.

A further compilation of reports particularly referring to results of buffing cork rolls, and the effect on yarn variation.

EDITOR COTTON:

The introduction of any new product inevitably brings up a discussion of its advantages or disadvantages as compared with the product which it is intended to supplant. Cork rolls are no exception to the rule. With the introduction of cork cots as a covering for drafting rolls in cotton manufacturing, many questions have been raised. In reference to the questions brought up by "CONTRIBUTOR No. 6029", I wish to offer the following:

The first question is, "Will not different size top rolls cause variation in yarn numbers?" On the basis of my experience in cotton testing, I was of the opinion that this small difference in roll diameter would not appreciably increase variation in yarn number, but, if it did produce a slight variation, the result would be just the reverse of that offered by your contributor.

With such differences in diameter of rolls as may be found under ordinary conditions, I believe that there will be no appreciable difference in slippage of the two rolls of varying diameters if working conditions are correct, the ample weight on the top roll preventing undue slippage. Theoretically, the larger top roll is more easily revolved by frictional contact on account of its greater radius. However, this difference is so small that it can not be measured readily by use of the average mill testing equipment. "CONTRIBUTOR No. 6029" states that he has seen top rolls on a spinning frame when run under dry saddles cause such slippage between the top and bottom rolls as to produce 30s yarn instead of 40s. I am of the opinion that other factors were responsible for this variation rather than the difference in slippage between top and bottom rolls. Assuming that the top roll slipped considerably, I believe that the yarn would be lighter instead of heavier. The roving can only be delivered at the rate of the surface speed of the top roll. The bottom rolls without the aid of top rolls can not deliver the roving. However, since I prefer to base my decision in regard to such points upon actual data rather than opinion, I ran a test and am passing the results along to "CONTRIBUTOR No. 6029" and others interested in these particular questions.

A given variety of cotton which had been uniformly mixed was used for the test. The staple was about 15/16-inch, approximately Middling in grade, and was spun into approximately 28s yarn. The cotton to be tested was divided into four parts, one of which, Lot 1, was spun on cork rolls 1 1/16-inch in diameter. Another lot, designated as Lot 2, was spun on cork rolls 63/64-inch in diameter. Lots 1 and 2, using the large cork roll and the small cork roll respectively, were run with dry (no oil) top rolls and saddles. The third and fourth lots, designated as Lots 1-A and 2-A, were then spun on the same large and small cork rolls respectively as Lots 1 and 2 but with ample oil applied to the top rolls and saddles. "CONTRIBUTOR No. 6029" may be interested in knowing the variation in weights of the different skeins. I am, therefore, listing below the size of each of the first 10 skeins of each of the four lots tested. However, please note that the additional average size given is based on the weight of 20 skeins of each lot.

TABLE I.

| | Dry Top Rolls | | Oiled Top Rolls | |
|---|---|---|---|---|
| | Lot 1 Large Cork Size (1 1/16" dia.) | Lot 2 Small Cork Size (63/64" dia.) | Lot 1-A Large Cork Size (1 1/16" dia.) | Lot 2-A Small Cork Size (63/64" dia.) |
| | 29.30 | 29.10 | 28.25 | 28.90 |
| | 27.25 | 29.40 | 29.70 | 28.00 |
| | 29.85 | 27.90 | 29.00 | 30.00 |
| | 28.00 | 28.25 | 27.80 | 27.90 |
| | 28.20 | 29.00 | 27.50 | 27.00 |
| | 28.10 | 27.85 | 27.60 | 29.75 |
| | 29.25 | 28.75 | 27.75 | 28.75 |
| | 27.90 | 28.90 | 27.90 | 27.50 |
| | 28.50 | 28.40 | 28.00 | 28.60 |
| | 27.40 | 28.65 | 26.50 | 28.10 |
| Total | 283.75 | 286.20 | 280.00 | 284.50 |
| Av. | 28.375 | 28.62 | 28.00 | 28.45 |
| Av. based on 20 skeins | 28.49 | 28.82 | 28.17 | 28.74 |

Table I shows that there is a slight difference in yarn size when using rolls the diameters of which vary as much as those used in this particular test. However, contrary to the inquirer's belief, the yarn made with the small cot is slightly finer than its corresponding lot made with the large cot. Table I also indicates that there is very little difference in the average size of the two yarns made with dry

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WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and willl be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

rolls and with oiled rolls respectively. The rolls heated up somewhat when no oil was applied and, if one continued to run the rolls with no oil, the surface speed would doubtless vary to some extent and considerable roughing of the surface of the rolls would result. Oil is, of course, necessary for good running work and for preservation of the rolls.

Of course, the foregoing test on dry rolls was not based on long continued dry running. If dry rolls were used for a long period, the numbers might run somewhat heavy. To illustrate: If the front steel roll is running 120 r.p.m., a momentary stoppage of the front top leather roll will not cause the ends to come down; neither is there any roving being delivered by the front rolls for the moment, and the travelers and spindle continue to add twist. However, if the top roll is held for a sufficient length of time, the end will break down on account of excessive twist, just as it does when the twist gear is thrown out of mesh and the frame started. When the roll is released after momentary stoppage, a large slub or undrafted roving is delivered. Therefore, on the yard basis and under such conditions the yarn will be heavy. This, of course, is an extreme case. I realize, however, somewhere between this extreme condition and proper oiling conditions there may be a point at which the work may run somewhat heavy on account of the surface speed of the top roll being somewhat retarded.

In order to answer the final question with reference to roll slippage, actual count was made of the number of revolutions made by the 1 1/16-inch and 63/64-inch rolls respectively as compared with that of the steel roll. The speeds of the rolls used in each test were taken at the same time; hence, the variation in power or slippage in the main drive does not enter into these particular data.

TABLE II.

| Kind of Roll | Diameter | R.P.M. | Surface speed or inches delivered per minute |
|---|---|---|---|
| Large cork | 1 1/16" | 100.00 | 333.795 |
| Small cork | 63/64" | 108.00 | 333.990 |
| Steel | 1" | 106.25 | 333.795 |

The surface speed is obtained, of course, by multiplying the product of the number of revolutions times the diameter by 3.1416. It will be noted in Table II that the surface speeds of the steel roll and of the large cork roll are the same whereas the surface speed of the small cork roll is slightly greater. This slight difference is due, at least in part, to the fact that it is rather difficult to count or estimate the fractional part of a revolution of the top rolls. Therefore, fractional parts of revolutions of top rolls were not taken into account. The data therefore show that there is practically no difference among the surface speeds of large cork rolls, small cork rolls and steel rolls.

To summarize, first, the difference in size of diameter of the top rolls does not contribute materially to the variation of the yarn numbers being produced. The variation in yarn count within the ten skeins of each individual lot tested is considerably greater than the average yarn variation as between lots. Second, the ratio of the surface speed of small and large diameter top rolls respectively to that of the steel roll is practically the same. Third, if the contributor's yarn numbers vary as much as from 30s to 40s, there are factors other than the diameter of the rolls either in the spinning or in some of the preceding processes which are responsible for this variation.

CONTRIBUTOR No. 6032.

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EDITOR COTTON:

Replying to the inquiry of "CONTRIBUTOR No. 6029" as to whether different sizes of top rolls cause a variation in yarn number, I have noted very carefully the point which he brings out in this connection, and while there may be a theoretical possibility of the conditions existing as he suggests, I do not think that from a practical operating standpoint that any difference could ever be detected as a result of the difference of the size of cork rolls which have been buffed.

It is customary to keep the rolls on one frame, or on a group of frames, the same size, as the rolls should all be taken out of at least one frame, or from a group of frames, at the same time for re-buffing, and this would keep the rolls the same size at the same time.

My experience over a period of three years with cork rolls has not shown any difference in the number of yarn resulting from a difference in the size of the rolls.

CONTRIBUTOR No. 6033.

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## Relative Speeds of Large and Small Slasher Cylinders.

EDITOR COTTON:

In a recent issue of COTTON, "CONTRIBUTOR No. 5022" brought up the question of relative speeds of the large and small cylinders of a positively driven slasher. The positively driven slasher was developed with the thought of eliminating as much strain and chafing from the warp as possible in the process of slashing, thereby preserving the elasticity of the yarn. To accomplish this it is very necessary to have both cylinders of the slasher travel at the same surface speed. If the cylinders do not revolve at the same surface speed the sheet of warp will have a tendency to try to pull one cylinder faster or act as a brake and slow the cylinder down. When this happens the yarn will slip on the cylinder, as the cylinders are positively driven and cannot change speed, thereby causing undue strain and slippage of the warp, to an even greater degree than is the case with the old style non-positively driven slasher. In this connection it is very necessary to have the cloth covered roll in the head of the slasher just the right diameter or there will be either too much pull or too much slackness on the sheet of warp. This point can be determined by feeling the tension of the warp where the lease rods separate the ends.

Now as to calculating the size of change gears for driving the slasher. All modern positively driven slashers are so geared up that the same size change

gear is used for both cylinders which will drive both cylinders at the same surface speed. The correct speed of cylinders cannot be determined very well mathematically but is due to the particular conditions under which the slashers are operated. After the speed at which the slasher is intended to be operated is determined, the usual procedure is to cover the roll in the head of the slasher with just enough sheeting to take the warp from the cylinders without causing undue tension or slackness between the head and cylinders. At this point it is entirely up to the judgment and experience of the slasher tender as to what constitutes correct tension.

I have found that over a period of six years it was never necessary to alter the change gears driving the cylinders, and I run a very wide range of yarns.

CONTRIBUTOR NO. 5057.

## Remedies for Warps Sticking to Slasher Cylinders.

**Leaving the back lease rod out helped the running of the warps, according to this contributor.**

EDITOR COTTON:

I have noticed several of the replies to the question of "CONTRIBUTOR NO. 4944" concerning warps sticking to slasher cylinders, and would now like to add a bit of my experience.

When I was tending slashers a long while ago, the boss had us to use coal oil (kerosene) once every week. The way we used it was to cut off the size inlet to the size box, and then pour about a quart of coal oil into the size box. We poured it slowly from one side to the other just over the immersion roll. We allowed the size to run as low in the box as we thought advisable before opening up the inlet and filling the box with size again. The boss said this kept the cylinders clean. I know I was not troubled with warps sticking to the cylinders, and I suppose the coal oil helped.

While I was working at one mill, we used a certain commercial compound softener. Another mill 30 miles away could not use the same kind of softener, as the warps stuck to the cylinders so badly, but they used another kind successfully. Our overseer took his slasher tender and went over one day to show the men at the other mill how to use our kind of softener. Well —they made monkeys out of themselves.

The conclusion was that there was a difference in the water at the two mills. I rather think that was a logical conclusion. We all know quite well that there is a difference in water. It is easy to recall how sticky the soap used to wash your hands will become in some water. I have never had occasion to try it, but it could be possible that some kind of water softener put into the water would help in cases of sticky warps.

As a means of preventing warps sticking to slasher cylinders, "R. T. (S. C.)" said in one issue, "We might also suggest putting an iron lease rod in the yarn between the size box and the cylinder. Drive this rod from side shaft or from the end of the squeeze roller by means of a belt or band, so that it will turn very slowly—just enough motion to prevent size accumulating on the roller. If an 8-beam set is run, let

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four beams be on top of the rod and four underneath it; on a 6-beam set run it three over and three under, etc."

I have seen this method used, and personally, I do not like the system. A lease rod in the warp between the size box and cylinders will divide the warp into two sheets, and I do not think the warp dries as quickly and uniformly in this way as it does when it passes over the cylinders in one solid sheet. Where I have seen the method given by "R. T." used, it has been the cause of more hard waste than any other thing about the slashers. Every loose end would wind up on this back lease rod, and the more it rolled up, the more ends it would break next to it. Of course it would immediately show up on the front cylinder by the part in the warp, but by then it was generally too late. There would be so many ends broken that there was nothing to do but re-lease the warp and cut out the part where the ends were broken. The boss was always "raring" about so much waste, and the tender was doing all he could. One day he accidentally forgot and left the back lease rod out, and he noticed a difference in the way the warp ran. The set was nearly out before the boss missed the rod and made the tender put it back. The tender then started forgetting the rod on purpose until he was convinced the warp ran better without the rod. He finally obtained permission to leave the rod out for a week. There was such a marked improvement in the running of the work that the rod was thrown away entirely.

As to the proper cooking of the size, I cannot add anything to the excellent suggestions that have appeared on this. The proper blanketing of squeeze rolls has also been thoroughly covered. Both items are very important. After these items are looked after, it should be seen that the cylinders are kept clean. Turpentine may do it; coal oil may do it; or water softeners may do it, provided they do not affect the penetration or adherence of the size. When you stop warps sticking to the cylinders, you have better running warps in the weave room.

JACK (TEXAS).

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EDITOR COTTON:

I notice that your "CONTRIBUTOR NO. 4944" has submitted an inquiry as to what causes warps to stick to the slasher cylinder. He states that he is running 22s warp yarn, using a size mixture of pure rendered beef tallow, corn starch and a gum.

In answer, I will ask him a question: Why does a laundress use paraffine wax on a smoothing-iron? The iron being hot and going over the starched clothing becomes gummy or dirty, causing it to stick. So it is with the cylinder of a slasher. It becomes what I call "dirty" and this is usually caused by excess starch or lack of compound. The cylinder must be kept clean; I like to see it shine.

I would advise that your correspondent use a mineral oil in his size. If he will put into the kettle of size about a pint of plain common kerosene I think he will find that it will clean up his cylinder and eliminate his trouble. He does not state the amount of tallow, starch and gum he uses, and I am inclined to think that his trouble is caused from not having the proper proportions in his mixture. If he were using a good compound, I think he would have no trouble.

In case a pint of kerosene does not do the trick as suggested, I would add a little more and try that.

Not knowing how much tallow, etc., he is using, I would not like to suggest a change, but it is probable that a little more tallow and a little less starch would help him.

CONTRIBUTOR NO. 4950.

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## Saving Money in the Cloth Room.

Some suggestions about preventing waste of cloth room supplies.

EDITOR COTTON:

There has been a good deal said about helping the supply clerk in keeping up with the supplies of each room, but comparatively little discussion about trying to save on the supply bill of each room. I am going to name a few cloth room supplies and point out a few ways in which savings may be made.

First, if it is convenient, one man should do all of the writing of the orders for supplies, and this man should be cautioned to be as economical as possible. A good way for him to do is to watch very closely the supplies on hand. If he will do this, he will be surprised to find how much he can save in supplies, or hold over until the next month, and so on.

The following is a list of most of the supplies used in a plain gray cloth room: Belting, burlap, pencils, heading and tacking twine, baling and heading paper, needles, ultramarine blue, oil, oil stain remover, printing of different kinds, baling ties, buckles or seals, pick-out combs, picks for inspecting hands, knives for folder hands, scissors.

We will take these up in the order named and see what we can suggest about making savings on each one.

*Belting.* Be sure that, on all of the round belting on the sewing machine, the fixer makes a round hole, so they will last longer, when he is putting them on. When a new belt is secured, he should make certain that he measures it correctly so he will not have any waste there. When he puts it together he should square it on both ends so it will run correctly. Another point about belting is to see that it is cared for properly in order to get the best service out of it.

*Burlap.* The second hand or overseer should see that the man who cuts the patterns for the press cuts them the right size so he will not have any waste. Burlap is a very costly item and should be used economically.

*Cloth pencils.* Let us try to teach the operatives how to save their pencils. Sometimes a hand will forget and carry his pencil out with him, and when he changes his clothing he will forget to change his pencil and then when he comes in he has no pencil. The man who gives out the pencils should try to remember when he gives them to each party, so he can bring down the cost of pencils.

*Heading and tacking twine.* We must use some of these supplies, but we can try to save on them by trying to measure off just enough at a time so we will not have so much to throw on the floor.

*Baling and heading paper.* We can save on these supplies by ordering the right size sheets. I mean, by ordering the paper just large enough to cover the cloth without having any extra.

*Needles.* We must use needles of different kinds. One way by which we can save on needles is to have a little container of some kind, or a pin cushion, to put them in when not in use, instead of throwing them around to get on the floor where they will be run over by a truck or swept up with the trash.

*Ultramarine blue.* This is used in making ink for branding cloth, and should be used very economically. One way to save it is not to make up very much when there is not very much branding to do, as the older ink gets the blacker it gets. Most of us like a pretty bright color.

*Oil.* This is a necessity, of course, but oil on the floor isn't doing anything any good. As OLD-TIMER has said, a spoonful of oil in the right place is worth more than a cupful on the floor.

*Oil stain remover.* This is used to take out oil in the cloth. Someone has said that if it were not for the oil that gets on the cloth while in process the seconds would be 50 per cent less. I surely do agree with him there. The way we can save here is first to find a good remover and use it very sparingly.

*Printing of different kinds.* This means the reports the inspectors make out for the weave room of the defects in the cloth, and the forms used in the book work of the room. We can save here by using these forms sparingly and not ordering too big a quantity at a time, as we never know when we might want to change the forms.

*Baling ties.* The man who cuts the ties for the press should cut them to the right length, and the press man should not put too many ties to a bale.

*Buckles or seals.* A good suggestion is to have a small container fastened on the press to keep buckles or seals in, so as not to have them on the floor. We are using seals, because we prefer them, but we have to be very careful about keeping them off the floor. When they are run over by a truck they are no more good.

*Pick-out combs.* Have a little leather container to keep the comb in when not in use so as not to bend the teeth, for a bent tooth will scratch up the cloth.

*Picks for inspecting hands.* The pick I have reference to is a little tool which is used to pick out bunches of filling. The way to save here is for the hands to be very careful not to bend the points.

*Knives for folder hands.* Someone may ask, why do you have knives for the folder hands? The reason is that it is an advantage when cloth is being cut in small pieces for export. A good idea is to have a holder for the knife when not in use. I have seen cases where the folder hand would lay his knife on top of the folder and it would fall into the folder and break the knife.

*Scissors.* Some people will wonder how in the world a hand could misplace or lose a pair of scissors. Here's one case I saw: A hand was cutting out a bad place in the cloth, and when he got through and folded the cloth, he folded the scissors with it. How did we

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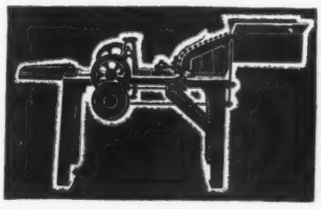

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know it? This bale of cloth went into stock, and was put in the warehouse, and in about two or three months the bale was brought back to the cloth room to be put up in a different way, and when it was torn down the scissors were found.

Let those of us who are second hands and overseers and superintendents try to teach our employees to be very careful with all of their supplies for they cost money. And let's not forget to do so ourselves.

CONTRIBUTOR No. 6050.

## Answers to Questions on Slashing.

Read what this man has to say.

EDITOR COTTON:

Sometime ago I noticed several questions in your magazine regarding slasher creels, weights, etc. The first question asked how friction ropes on the beams in slasher stands should be put on, and how much weight is required on beams with 18,000 yards of 21s yarn? I do not think this question is definite enough. I think the inquirer should have given the number of beams in the set and the size of the beam heads. The size of beam head has considerable to do with weighting, as does the number of ends in a section. A beam with 500 ends needs much more weight to steady it in running, stopping and starting than a beam with 400 ends.

Ropes should be fastened to a hook in the floor just below the center of the beam head, or to a stay rod running across from one side of the creel to the other under the center of the beams. A set of various size weights should be had, and the heavier weights should be placed on at the beginning of a set. The last 3,000 yards will not require as much weight as the first part of the set.

Ropes should be put over the beam the light way; that is, with the yarn running towards the size box the weight should hang on the back side of the beam. If slashing the regular way, the hooks under the bottom beams in the creel may have to be put to one side of the center on account of space between the beam head and floor.

Ropes, whether leather, twisted rope, or braided, should be kept clean at all times.

The second question asked whether the stands on the back of the slasher should be screwed up tight as a means of placing friction on the yarn to keep kinks out. To this, I would certainly say no. These stands are adjustable for the purpose of alignment in starting new sets, as in some mills section beams may have varying size nuts. After alignment there should be no lateral play.

In slashing the usual way, over and under, it is not possible to have as good control of individual sections as when sets are all run off the top and kept separate until the sheets of yarn reach the size box. On the old system, some slasher men use the back beam to control nearly all the other beams in the set. This answers the question, "Why does the back beam have more yarn on it when the set is out than the rest of them?"

Some writers in previous articles in COTTON have blamed the waste made at slashing or uneven measuring on two or three different warpers. This may happen once in a while, but I find most of my trouble in the running off of sets. All beams should deliver yardage to the size box in proportion to that received at the warper. One way to avoid so much waste being made on the back beam in regular slashing is to put a weight on one end of the back beam equal to the weights on the other beams and a light brake arrangement on the opposite end attached to a shipper, so that when stopping the movement of the shipper would apply a little extra tension to the back beam to keep it from slackening up. In starting up again, the shipper would release the extra tension. Good judgment and a sensitive touch are essential at slashing.

I think all of the questions asked by "CONTRIBUTOR No. 4797" resolve themselves into the question, how may waste be avoided at the slasher and yarn put onto the loom beams without 1/5 of the yarn being made weak by stretching the back beam? My reply is to run section beams all separately from over the top, either from a regular creel, over rollers, or from a creel graduated from the back beam down to the front beam, as in heavy duck beaming.

CONTRIBUTOR No. 5064.

## How to Prevent Neps in Card Sliver.

Several experienced men comment here on this problem. What is your idea as to the best way to eliminate neps?

EDITOR COTTON:

This is in response to the question of "CONTRIBUTOR No. 6046", regarding the trouble which he is having with neps in card sliver.

I note that this man is using Middling 1 1/16-inch cotton. Several years ago we had considerable trouble with neps when we were using 1 3/32-inch Western cotton. We helped the situation out by making some changes in the machines and organization, and now we are running 1 1/16-inch Western cotton and have very little trouble with neps.

Our opening machinery consists of a bale breaker, vertical opener and a Centrif-Air machine. The speed of the beater in the vertical opener is about 650 r.p.m. We tried to use a Murray cleaner in this line, but found that this machine had a tendency to curl the cotton and accentuate the trouble with neps—therefore, we decided it not to our advantage to use the Murray cleaner for this type of cotton, in this line.

We also found that excessive speed on the exhaust fan and condenser in the picker room will give trouble in this respect. It would be well for your correspondent to check the speed on these machines, and if he finds that they are unusually high, he might help his trouble by reducing them.

We use a two-beater breaker picker, and a single-beater finisher picker, and the speeds of all of these beaters are between 1150 and 1200 r.p.m., which we think to be about right for this type of cotton.

We think that work done on our cards had more to do with minimizing the trouble we had with neps than anything else. A very important point is to keep the clothing sharp, and to do this it is of course neces-

sary to have a sufficient number of grinding rolls to enable us to grind often. We think it better to grind lightly and often rather than heavily over a longer period. We prefer to run about a 13½ or 14-ounce lap into a 52-grain sliver, and to card not more than 7½ pounds per hour.

I note your correspondent states that he tried to reduce his doffer speeds from 11 r.p.m. to 7 r.p.m., but did not obtain any noticeable difference in the appearance of the sliver. It is my opinion that the condition and cleanliness of the sliver can be improved enormously by reducing the production of each card. However, it is necessary to have the clothing sharp, and to have the stock as delivered to the cards in lap form in fairly good condition in order to make a good sliver.

I trust this information will be of some benefit to your correspondent, and I know from personal experience that if he will do some of the things outlined he will improve the condition of his sliver as far as neps are concerned.

CONTRIBUTOR NO. 6053.

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EDITOR COTTON:

I notice that "CONTRIBUTOR NO. 6046" is having trouble with neps in his card sliver. So are the rest of us, but I will try to help with a few suggestions.

There is a danger of making too much toppings, so that the flats will not hold them all, but will let the cylinder take the waste from the flats in lumps and cause the sliver to look like it is rolled (as he describes) and this will also let quite a lot of neps in the work. Where flats are set too close, such as 7/1000, toppings should not weigh more than 15 to 18 grains to the flat.

I notice that the contributor sets the feed plate to a 10/1000 on 1 1/16-inch cotton. If his lickers-in are in good shape, I think that is too close a setting, and I would advise him to try a 17/1000 setting and watch the improvement in his work.

Card flats should be kept sharp and should not be ground too heavily, but often.

Dull cylinders will let the neps go by and cause the work to look bad, also, too heavy grinding will hook the wire on the cylinder and cause the stock to be delivered to the doffer in lumps.

On straight wire card clothing, if this is properly ground, it will give very good results, but grinding it too heavy causes bad work.

Too close settings on cards cause more trouble than they are worth. Cards set to a medium setting give better results than those that are set too close.

CONTRIBUTOR NO. 6052.

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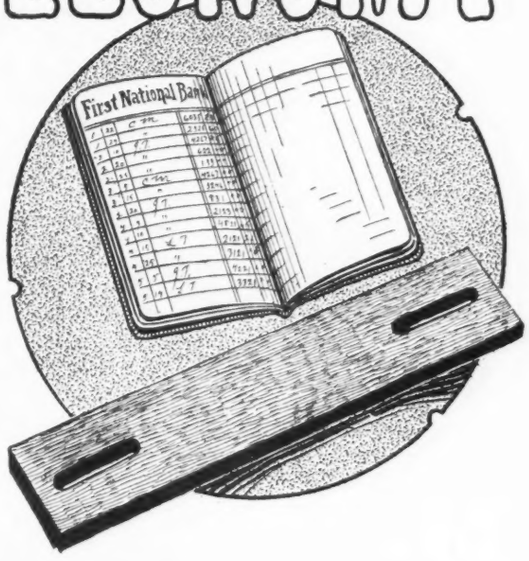
EDITOR COTTON:

One of your readers, "CONTRIBUTOR NO. 6046", who reported in the March issue that he is having trouble with neps in his card sliver, presents an unusual problem in that he appears to be using almost ideal settings on his cards. He listed his settings as follows: Flats, 7; stripping plate, 34; bottom plate, 22; doffer, 7; licker-in to cylinder, 7; feed plate to licker-in, 10; mote knives, top and bottom, as close as possible without hitting screens, back, 12; middle,


ECONOMY

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34; and top, ¼-inch; back plate, 22.

He said he runs Middling cotton, 1 1/16-inch, with a 42-pound lap making a 51—52-grain sliver, stripping four times a day of 11 hours. His cylinder speed is 160 r.p.m., doffer 11 r.p.m. He said that his stock looks like it is rolled.

Sometimes, due to poor foundation for new cards, it is impossible to get close settings, but in spite of this, many mills with cards on the third floor of old shaky buildings apparently are carding well with only a trace of neps.

The writer is at a loss to understand why "CONTRIBUTOR No. 6046" should have very much trouble with neps *provided his cards are not dull.* Light grinding on 1 1/16-inch cotton is a mistake, and the writer believes that cards on this cotton should be well ground after running not more than 250 hours.

I cannot tell this man how to remedy his trouble, but would suggest that he try the following settings on 1 1/16-inch cotton:

Flats, 12 at back and 10 at front; stripping plate, 34; bottom plate, 22; doffer, 7; licker-in to cylinder, 10; feed plate to licker-in, 15; back plate, 34 (depending on the fly); mote knives in the usual way.

If these settings are obtained, and he keeps *sharp* clothing throughout, including the licker-in, there should be very few neps.

CONTRIBUTOR No. 6055.

## Recent Trends in Running Rayon.

(Continued from page 33.)

streaks, or some such difficulty, will develop. This is not always true. There are many conscientious converters and jobbers whose contract is law, and the mill knows that the goods are sold when a contract is made with them. On the other hand, there are some cloth buyers who either are operating on a shoestring, and cannot afford any loss in a bill of goods, or have no conscience about taking advantage of a mill through a technicality.

Unfortunately no piece of goods can be made to be perfect. Faults can be found in any delivery of goods if one wants to be sufficiently critical. It simply means that a piece of goods must be "merchantable". But it is not so simple as it seems. Goods merchantable on a good market may not be on a declining market. Delivery may have been made exactly up to sample in every respect, but meanwhile the standard has changed because the same goods are wanted at a lower price.

The mill has two defenses against this intangible factor. The mill will get to know the cloth buyers who are fair on this question and will cater to them. The mill also will tend to trade up and sell those buyers the best constructions that they can afford to take. The better the cloth, the less it is liable to give the purchaser an alibi. One mill man stated recently that he felt sure that certain buyers would take only cheap constructions because they knew in the event of a decline they would have plenty of technical reasons for getting out of the contract. This may be too skeptical a view, but in any case the mills making the better constructions are less liable to run into trouble of this kind.

On the other hand, the weaving mill man has his own side of the contract to carry out. It is not only good policy but it is good economy to meet specifications. He not only enhances the reputation of his mill by doing so, but he helps hold up the market. Each order that is sold with less picks or less ends or cheaper yarn makes it that much harder to get back to the former market level. There is an encouraging movement all through the trade toward upholding cloth standards. The Better Fabrics Bureau is an outstanding example of this movement. The agreement of the lining material converters is another. Better times are ahead and all factors in the trade realize that they can be hastened by better merchandise and merchandising.

## Controlling Waste Losses in Spinning and Weaving.

EDITOR COTTON:

Records of waste losses during carding, spinning, and weaving deserve careful scrutiny in any mill for they reveal essential characteristics of the stock that is being used, the efficiency or otherwise of the machine processes being used, and the degree of skill of the operatives. In a brief survey of waste losses made in the average mill it is possible to deal only with the salient features, including an outline of general principles and some practical observations. It is for each particular mill to tackle its own problems in this field, with the object of reducing these losses, whether they be of raw material, yarn, cloth, or general supplies. Today, more than ever, there is need for economy in production, and the prevention of unnecessary waste is a profitable and interesting field for investigation.

### Figuring Costs.

A mill cost system that is effective in control bases the price of raw material on the net amount of cleaned cotton; that is, as the cardroom waste losses increase the price of the raw material increases. The best method of obtaining the cost of cleaned raw stock is for a sample of convenient size to be run through opening, picking, and carding machinery, the machines being especially cleaned for the purpose, and particulars obtained of the waste made at each point up to the finished card sliver. The net amount of clean sliver obtained will indicate the total waste losses, both invisible and visible, and the price must then be readjusted in accordance with these losses.

Presuming that a mill is using raw stock of a definite staple length and grade and producing a standard yarn the waste losses at each machine in the cardroom will be stable and well known. It is, of course, part of the managerial policy to purchase raw material which will produce suitable yarn, give low waste losses, and be generally economical. Therefore, the use of a mix which is slightly inferior in quality will produce excessive waste because of its bad running qualities in the mill, and although the initial price may be lower than that of the very suitable mix, the ultimate price, based on waste losses, will be higher, in addition to reduced production in the mill.

On the other hand there are equally costly dangers in using a mix that is slightly superior in quality

in comparison with the standard. The losses during opening, picking, and carding will likely be the same as those from the standard mix, but the yarn produced will be too good for the purpose for which it is intended, thus causing a customer to be dissatisfied with the product because of fluctuating quality. In addition to this the spinner has paid more for the cotton than was necessary and thus reduced his margin of profit.

All of which points to the necessity for a standard quality of cotton mix, that will give fairly stable waste losses, and a minimum cost of cleaned raw stock. This is more nearly achieved when a large bulk of cotton is being dealt with involving the use of large mixings, for then there may be judicious blending of "off" bales with the great bulk of normal cotton without evil results.

For the purpose of illustrating the cardroom waste losses when producing coarse to medium yarns the following figures may be assumed. Opening and picking 6 per cent, carding 4.5 per cent, and the remainder to the spindle point 2.5 per cent. These figures include invisible loss at each point, such as fan fly, that which is recovered in the form of sweeps, and that due to the evaporation of moisture. This latter deficiency can be greatly counteracted by effective humidification, although practical considerations do not, even if it were possible, allow of having sufficient relative humidity in the atmosphere to counteract all evaporation losses during treatment of the cotton up to the stage of yarn. Therefore after-conditioning of the yarn to ensure the allowable moisture content must take place. In many tests made by the writer the losses from the card to the spindle point are negatived by effective humidification and by after-conditioning.

### Where Losses May Be Made.

Three points are thus revealed where various preventable losses may be made, (a) during machine processes in the cardroom, (b) from the card to the spinning frame owing to ineffective humidification, (c) in the after-treatment of yarn to insure adequate and allowable moisture regain.

In dealing with the first point many practical considerations arise. For the production of a clean, even yarn, all foreign matter must be removed without also removing the clean cotton. This is, of course, easier said than done, but the judicious setting of opener and picker grid bars, the use of suitable lattice speeds, and beater speeds, and periodical examinations of the waste removed from the various boxes will constitute an effective check on the material that is cast out and will prevent the removal of much good cotton.

Very often laps are sent back from the picker because they are not the correct weight and invariably this is due to a badly adjusted regulating motion and causes additional waste. Laps that are waiting to go to the cards must be stored neatly in some convenient place and it is necessary to exercise care in handling them. Very frequently one finds cotton torn from laps lying about the picker room floor to become stained and dirty and useless for again being put in the mix.

Normal precautions at the card will avoid much

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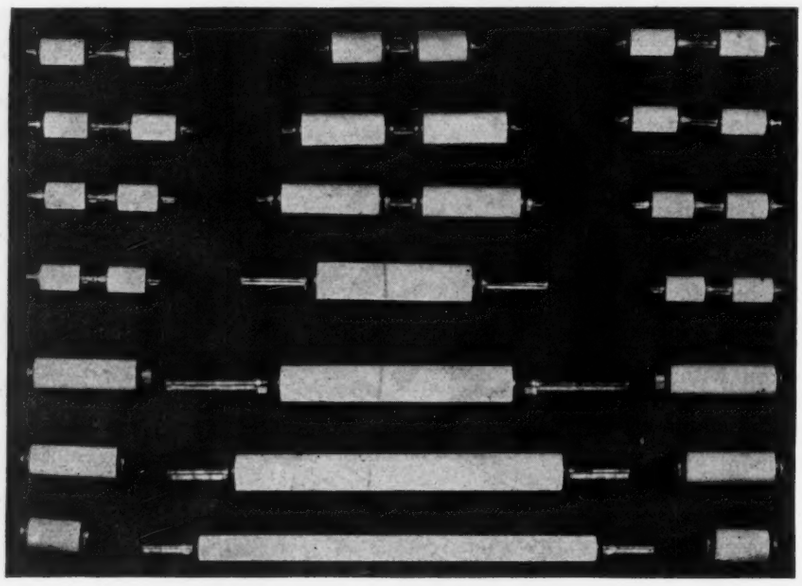

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unnecessary waste. When a new lap is put in, the end must be unwound carefully and fed under the lap roller at the proper time. This will tend to prevent waste and produce a better web. Nor can the good setting of flats and doffer be over-emphasized. Bad flat setting means bad cleaning and impurities passing forward in the web, with the consequence that good cotton comes out in the strip. The thickness of the flat strip, which is regulated by the position of the stripping plate, must not be excessive. There is always a certain amount of good cotton in flat strips, but when the strip is too thick much good cotton is being wasted. Effective setting of the doffer to cylinder enables the doffer to gather the fibers properly and prevents the cylinder from becoming tightly charged with fibers; correct setting of the doffer comb effectively clears the doffer.

During card stripping that is done by brush the cylinder must be run bare before the operation begins; quite frequently a stripper will put the brush to work while the cylinder is charged with good cotton, with the result that all this goes into the waste bag.

At the delivery end of the card it is a frequent practice, when an end is broken, for a tender during re-piecing to feed the end through the calender rollers and into the can without joining it to the other end. When the can is used at the first head of drawing the drawframe tender may be busy and neglect to bring out the broken end, especially if there is but a small amount of sliver in the can, and this process is repeated, and often one sees small portions of sliver neglected until they become dirty and useless. To insure that each can contains a definite amount of sliver, breaking-off of card cans should be done at regular intervals. This will prevent certain cans from containing too much sliver, some of which falls over the top and is made into waste.

Many of these points seem of small importance but we must remember that the mill which has an efficient interior organization considers, very fully, every minute detail relating to processes and machinery, realizing that in such a policy lies the secret of successful working.

### Effect of Proper Humidity.

Referring to point (b) the efficacy of proper humidification to reduce invisible losses is generally realized, but there is room for improvement in maintaining these plants so that they may give continuous good service. Constant and careful attention is necessary with a relative humidity of about 56 degrees for the card room, and around 65 degrees for the spinning room. Almost every system on the market today is effective if handled properly, with an adequate system of daily readings and recordings, periodical inspections, and adjustments wherever necessary.

But even with adequate humidity there is generally a need for after-conditioning, to insure the allowable moisture content in the yarn and to make it strong and suitable for the wear and tear of the next process.

Under normal conditions much visible waste is not made from the card to the spindle. It is when the mix is of a slightly lower quality than is required for

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the type of yarn that is to be produced that excessive waste is made, in the form of underclearer laps and spoiled rovings and bobbins. In fact, as soon as end breakages become too high, waste losses rise, and there must be either a return to the previous type of cotton mix, or a reduction in machine speeds until the inferior cotton has passed through.

### Practices That Cause Waste.

Certain practices on fly-frames tend to make too much waste such as allowing an end to run down, thus making a spoiled bobbin, the breaking-out of bobbins containing half-a-dozen or more laps, for although these pieces are intended to be used again they are often made into waste, and when used the extra piecings necessary cause bad work.

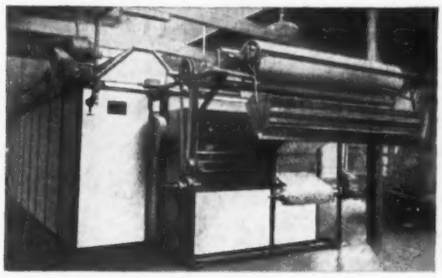
These principles apply also to the spinning frame and weekly returns of bobbin and yarn wastes should be checked carefully in relation to the amount of production. Both in carding and spinning departments drawframe sliver, roving waste, under-clearer laps, etc., are dropped on the floor and mixed with the sweeps. Each class of waste has a particular value and must be kept separate from the other to obtain the best prices.

Employing yarn waste for cleaning purposes usually leads to the use of good bobbins, and when one considers the financial expenditure necessary to make the yarn it proves rather a costly cleaning material. Coarse, washable cleaning cloths are best suited to this purpose, and when they are provided strict orders may be given forbidding the use of cotton waste, or any form of yarn, and the operative has no excuse for using it.

The examination of various supplies that have been discarded, such as ropes, belting, banding, etc., often reveals that these have not been used to the best advantage. There is, of course, no reason in using for important work a belt that is worn out as it is only likely to cause trouble, but very often it may be utilized in a less important sphere. But while a periodical examination of miscellaneous supplies that have been discarded as useless may not reveal uses in new directions it will serve to prevent the waste and negligence which is apparent when such an inspection is not carried out.

Spooling, winding, and warping present no real problems in the way of excessive waste, that is during normal running, and a system of marking yarns, where many counts are used, will prevent waste due to mixings. Slasher sizing cannot be dismissed so lightly. In this work the tendency is to develop along the lines of higher speeds, longer lengths, and automatic control, and much progress has been made, but the first practical consideration is for the warp yarn to be so treated that it will present no difficulty during weaving and such defects as brittle yarn caused by excessive heat, insufficient or too much size, ends on the section beams breaking and not being pieced, and soft sides to the beam must be strenuously avoided, for directly or indirectly they cause waste to be made at the loom.

When a warp has run out during weaving a certain amount of waste is inevitable, but this can be reduced to a minimum by the slasher tender having the

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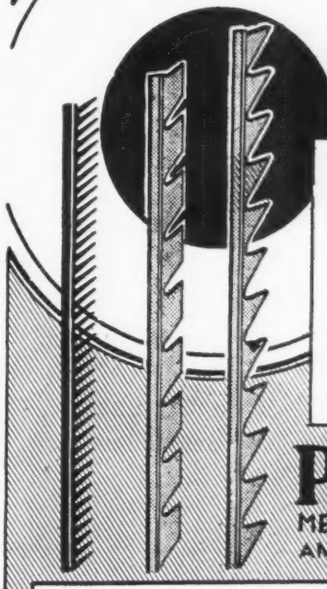

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the type of yarn that is to be produced that excessive waste is made, in the form of underclearer laps and spoiled rovings and bobbins. In fact, as soon as end breakages become too high, waste losses rise, and there must be either a return to the previous type of cotton mix, or a reduction in machine speeds until the inferior cotton has passed through.

### Practices That Cause Waste.

Certain practices on fly-frames tend to make too much waste such as allowing an end to run down, thus making a spoiled bobbin, the breaking-out of bobbins containing half-a-dozen or more laps, for although these pieces are intended to be used again they are often made into waste, and when used the extra piecings necessary cause bad work.

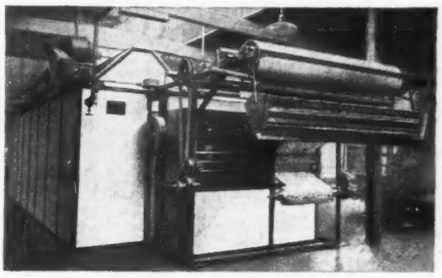
These principles apply also to the spinning frame and weekly returns of bobbin and yarn wastes should be checked carefully in relation to the amount of production. Both in carding and spinning departments drawframe sliver, roving waste, under-clearer laps, etc., are dropped on the floor and mixed with the sweeps. Each class of waste has a particular value and must be kept separate from the other to obtain the best prices.

Employing yarn waste for cleaning purposes usually leads to the use of good bobbins, and when one considers the financial expenditure necessary to make the yarn it proves rather a costly cleaning material. Coarse, washable cleaning cloths are best suited to this purpose, and when they are provided strict orders may be given forbidding the use of cotton waste, or any form of yarn, and the operative has no excuse for using it.

The examination of various supplies that have been discarded, such as ropes, belting, banding, etc., often reveals that these have not been used to the best advantage. There is, of course, no reason in using for important work a belt that is worn out as it is only likely to cause trouble, but very often it may be utilized in a less important sphere. But while a periodical examination of miscellaneous supplies that have been discarded as useless may not reveal uses in new directions it will serve to prevent the waste and negligence which is apparent when such an inspection is not carried out.

Spooling, winding, and warping present no real problems in the way of excessive waste, that is during normal running, and a system of marking yarns, where many counts are used, will prevent waste due to mixings. Slasher sizing cannot be dismissed so lightly. In this work the tendency is to develop along the lines of higher speeds, longer lengths, and automatic control, and much progress has been made, but the first practical consideration is for the warp yarn to be so treated that it will present no difficulty during weaving and such defects as brittle yarn caused by excessive heat, insufficient or too much size, ends on the section beams breaking and not being pieced, and soft sides to the beam must be strenuously avoided, for directly or indirectly they cause waste to be made at the loom.

When a warp has run out during weaving a certain amount of waste is inevitable, but this can be reduced to a minimum by the slasher tender having the

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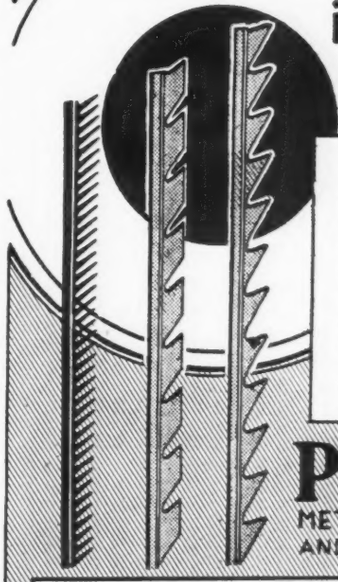

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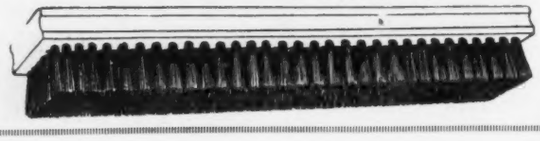

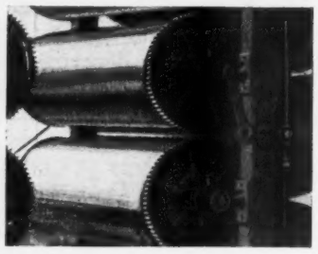

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warp ends at the proper tension during the initial stages of winding yarn on the beam. Often enough a warp has to be cut out when there is a considerable amount of good yarn on the beam because the sides are slack or other ends not at the correct tension. It should be a standard practice to leave as little yarn on the beam as is possible and fixers and weavers instructed to this effect.

In starting a new warp a certain time must elapse before the loom is shedding properly and producing good cloth, and a certain amount of waste is inevitable but there is a reasonable limit which should not be exceeded. The loom can be quickly adjusted to the new warp so that it will produce cloth that is good instead of cloth that must be cut off in the finishing room. Then too, the practice of running half-beams is highly productive of waste, although in specific cases it may be necessary so that the cloth can be produced in the shortest possible time for early delivery, but it should be strenuously avoided whenever possible.

In the weave room waste losses of yarn, both warp and filling, are exceedingly important, since the cost of producing yarns up to this point has been substantial. The modern system of weaving does not tend to produce a large amount of filling waste, as the frame spun yarn is immediately used at the loom on the bobbin on which it was spun. An examination of empty bobbins returned for waste stripping will show if too much waste is being made, that is, a large portion of unused yarn left on the bobbin. When this happens it is usually due to a faulty bobbin changing mechanism at the loom or the initial layers of yarn being placed in the wrong position on the bobbin at the spinning frame. Both these faults are rectified without much difficulty, and there is no excuse for them being repeated.

CONTRIBUTOR No. 4980.

## Stopping Comb Boxes from Throwing Oil.

EDITOR COTTON:

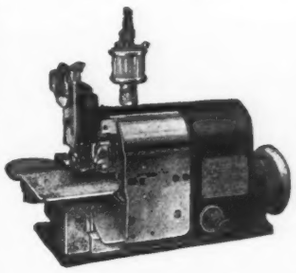
I look forward to receiving COTTON each month, and I read with much interest the various articles. I was especially interested in the letter of "CONTRIBUTOR No. 4934" about different questions concerning the comb box and its oiling.

The writer has had a lot of trouble with comb boxes throwing oil. Let us examine the comb boxes. First, let us see if we are using the right oil for this purpose; is it a good oil?

Let me tell you what we did. We took all of the comb boxes down and cleaned them with gasoline, refilling them with the same oil the mill had been using for years. It worked for awhile, then the boxes would throw oil just as bad as before.

We then took the boxes down again and cleaned them with gasoline, and tried another oil. That was the trouble. The first oil we used had a substance in it that, when it got warm, would cake and gum every oil passage in the comb box. Then, as we all know, the oil must circulate from the reservoir to the top of the comb box. How is it going back to the reservoir if every oil passage is caked and gummed? I think if "CONTRIBUTOR No. 4943" would use an oil that is suitable for this purpose, it will end his trouble like it ended my trouble.

CONTRIBUTOR No. 6036.

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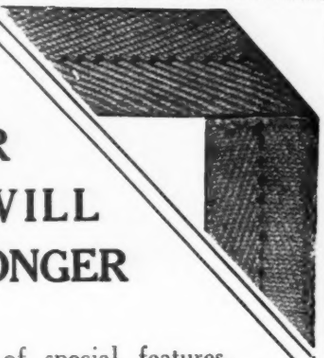

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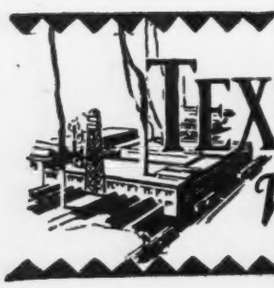

# TEXTILE BOOKLETS *Worth Writing For!*

*The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.*

**52. The Lincoln Twin Disc Floor Machine**—showing the many advantages of clean, sanitary floors, the saving of time and labor through using floor cleaning machines and describing in detail the various models of Lincoln floor machines. Lincoln-Schluster Floor Machinery Co., 213 W. Grand Ave., Chicago, Ill.

**54. Shipper's Handy Helper**—A forty-eight page booklet giving valuable information on shipping problems, including suggestions on packing, marking, numbering and invoicing shipments and describing the principal items generally used in shipping departments. Southern Shippers Supply Co., 118 Courtland St., S.E., Atlanta, Ga.

**55. Interpretation of Analysis for the Layman**—An eight page booklet explaining what the various terms used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

**56. Technical Service Data**—giving information on processes of textile manufacture in the use of oils, softeners, etc. National Oil Products Co., Harrison, N. J.

**57. Reducing Textile Costs and Troubles** telling all about the benefits of water treatment. Permutit Co., 440 Fourth Ave., New York, N. Y.

**61. Belt User's Book**—76-page book with suggestions, rules, tables and charts helpful in the purchasing, application, use and care of belting. J. E Rhoads and Son, 35 North 6th Street. Philadelphia, Pa.

**62. Rubber Products for the Textile Industry**—a 40-page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

**63. S-W Paint Standardization Plan**—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

**64. Efficiency and Performance of SKF Roller Bearing Spindles**—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., 40 East 34th St., New York, N. Y.

**65. Why Cooper Hewitt Light is Better Than Daylight**—a 16-page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken. N. J.

**66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176**, describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston. Mass.

**67. Specification and Size book, I-31**, convenient reference book giving complete information and prices on Rockwood Short-Center Drive for textile machines. Rockwood Manufacturing Company, Indianapolis, Indiana.

**68. Rockwood Pulley Specifications**, a reference booklet giving complete specifications of 2,540 stock sizes of pulleys. Rockwood Manufacturing Company, Indianapolis, Indiana.

**69. Monel Metal Equipment for the Textile Industry**—a 50-page booklet with more than 100 illustrations of various items of equipment for textile mills. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

**70. Fafnir Ball Bearings for One-Process Pickers**—outlining the advantages of ball bearings in guaranteeing smooth accurate motion particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

**71. Short Cuts to Power Transmission**—A 74-page handbook for belt users, incorporating the most important phases of practical belting practices, including considerations in belt buying, care of belts, making belt joints, belt calculations, causes of belt troubles, etc. Flexible Steel Lacing Company, 4619 Lexington Street, Chicago, Ill.

**72. The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

**73. New Reeves Catalog T-32**—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

**74. Colgate-Palmolive-Peet Bulletin No. T-22**—booklet giving complete details of degumming and dyeing in a single bath with soap. Colgate-Palmolive-Peet Co., 919 North Michigan Ave., Chicago, Illinois.

**75. The Facts About Armstrong's Seamless Cork Cots**—A helpful book containing plain facts, cost studies based on actual mill records, expert analysis, complete details on the advantages of Armstrong's Seamless Cork Cots. Armstrong Cork Company, 923 Arch Street, Lancaster, Pa.

**1. Cotton Picking, Carding and Spinning**—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling By Whitin Machine Works, Whitinsville, Mass.

**2. Pepperell Equipment**—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

**4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor**—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

**8. "Textile Brushes"**—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

**10. Leathers, Textile**—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

**11. Whitinsville Rings**—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

**12-A—Instruction Manual for Type K Bobbin Cleaner. Also Instruction Manual for Utsman Bobbin Cleaner**—two separate booklets describing adjustments of machines outlined, and also describing effect of bobbin shapes upon the cleaning process. These booklets intended for users of machines outlined. Applicants should designate which booklet is desired. By the Terrell Machine Company, Charlotte, N. C.

**12-B—Instruction Manual for the Termaco Roving Bobbin Cleaner**—booklet in four sections on adjustment of machine; on how to use machine to best advantage in reducing waste and saving labor; parts catalog; description of new attachments which can be applied to earlier models of the machine. By the Terrell Machine Company, Charlotte, N. C.

**15. The Powers System of Thermostatic Control**—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

**18. Popular Industrial Chemistry**—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, 1404 No. Front St., Philadelphia, Pa.

**20. Bleaching, Dyeing, Finishing and Printing Textile Goods**—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

**21. Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co, 748 Rice St., Atlanta, Ga.

**22. Tragasol and Its Uses**—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

**23. Practice of Rayon Sizing in American Mills, Raygomm, Lakco Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

**25—"Lupogum" and "Monopole Oil"**—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

**28. Akron Belting.**—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

**29. Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

**30. Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

**38. Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

**41. Budget Control**—40-page booklet shewing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits. By Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.)

**42. Textiles and the Telephone Typewriter**—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel and Tel. Co., Long Lines Department, Atlanta, Ga.

**44. Points of Interest in and Around Atlanta**—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

**45. Fidelity Universal Ribbers**—A forty-eight page booklet showing the advantages and many styles of ribbed fabric and describing in detail and illustrating the latest developments in ribbers. Sent free on request by Fidelity Machine Co., 3908 Frankford Ave., Philadelphia, Pa.

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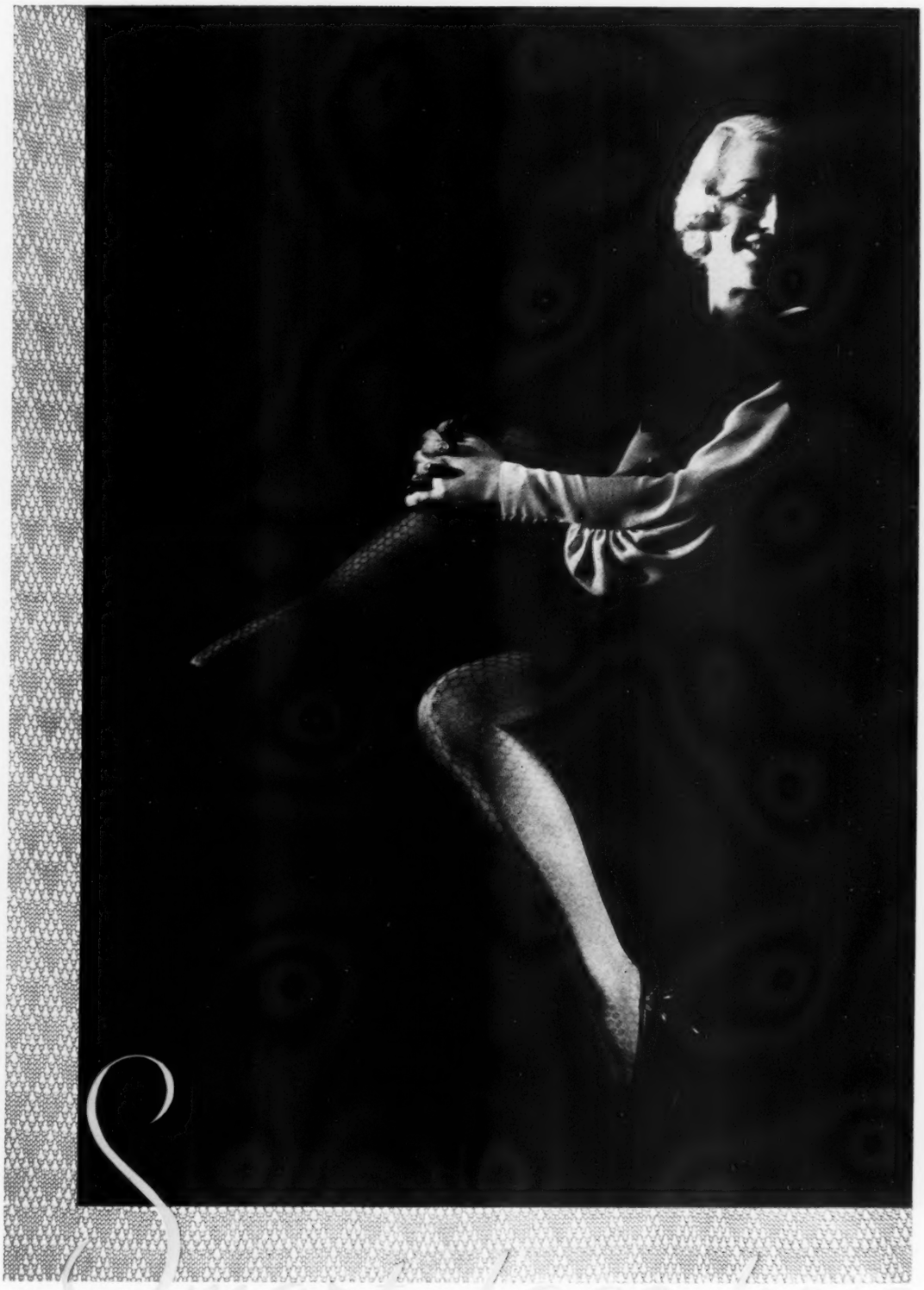
# KNITTING SECTION

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# A Definition of Gauge and Its Relation to Knitting

By Fred T. Gaines

THE LACK of a universal standard of gauge and difficulty in obtaining information for a clear understanding of the broad application of gauge in the knitting field inspired the suggestion for this article. To be specific in this discussion is difficult owing to arbitrary methods used by different machinery manufacturers except for flat or full-fashioned machines.

From the author's standpoint it has been very interesting to review gauge data accumulated during my experience in the industry, in addition to information obtained in practice. It is not out of place to give credit to equipment manufacturers for data accumulated from time to time, whether ancient or modern. Among these references are the Hemphill Co., Scott & Williams, Inc., and Standard Trump Brothers Machine Co., seamless machine manufacturers; Wildman Mfg. Co., rib, sinker body and spring needle circular knit manufacturers; H. Brinton Co. and Fidelity Machine Co., automatic circular knitting machinery manufacturers, including multicolor machines and ribbers; Textile Machine Works, full-fashioned hosiery machines; Southern Textile Machinery Co., steady dial loopers; and the Torrington Co., latch and spring beard needles. Trade journals and texts on knitting are other sources of information.

Illustration No. 1. Sample of seamless fabric, sinker reverse plaiting . . . . . .

In co-ordinating information with data and illustrations where possible it is the author's desire that some of the magazine's interested readers get a better idea of the term gauge, and that some benefit will accrue to the knitting industry from this general outline which has been obtained in a more or less piecemeal manner over a period of years.

### Seamless Machines.

Illustration No. I shows a sample of seamless fabric made on a 220-needle, 3½-inch, 48-gauge sinker reverse machine using 150 denier viscose rayon plaited over 100 denier Chacelon (acetate rayon).

For seamless machines the designated gauges are arbitrary and based on the designated gauge of needles furnished by needle manufacturers.

The fineness of the knitted fabric and degree of fineness of the stitches in the fabric are determined within certain limits of yarn sizes from the gauge needles used and needle spacing or number of needles per inch.

Seamless machine builders are not in absolute agreement in their methods of determining diameters of cylinders. Some measurements are based on the inside to inside diameters of the cylinders, others measure from the back to the back of the needles inside the needle row, or from the bottom of the cuts to the bottom of the cuts on the diametrically opposite sides of the cylinder. Still others use the diameter of the circle along the needle row between the centers of the hooks of the needles, while another method used is the outside diameter of the needle cylinder or the diameter of the cam surface of the needle cylinder.

Scott & Williams machines and the Hemphill Banner machines have their diameters measured from the back to the back of the needles. Fidelity Machine Co. and Wildman Manufacturing Co. measure the outside diameter of the cylinder. H. Brinton Co. measure from the back to the back of the needles.

For seamless machines, gauge at present is considered to represent the the thickness of the shank and size of the hook of the needles. Sometimes the gauge of the hooks of needles is finer or coarser than the gauge of the shanks in order to use finer or coarser yarns respectively, thereby providing for knitting a greater degree of fineness or coarseness of fabric than with the same gauge hook and shank of needle for which the cylinder was cut. For example, a 54-gauge shank with a 48-gauge hook will knit a heavier yarn than the same 54-gauge shank with a 54-gauge hook, and vice versa.

In determining the gauge needle that is to be used in a machine, the wall of the cylinder between the needles at the bottom of the cut or needle slot of the cylinder should be a little thicker than the shank of the needle and this besides determining the gauge as far as the shank of the needle is concerned also determines within certain limits the number of needles per inch and total number of needles in the cylinder of a certain diameter.

There is a considerable deviation from the foregoing, as can be observed from the total number of needles in the machine and number of needles per inch of a certain gauge, obtainable in 3½-inch and 3¾-inch back to back needle diameter of cylinders, if desired, as shown in Table I. (This does not presume the strict outside limits but furnishes an illustration of the principle.)

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For ribbers, Table II illustrates the number of needles to the inch and gauge of needles obtainable in cylinders of rib knitting machines—dial usually one gauge finer. (Diameter based on outside cylinder measurement.)

Please observe that there being two sets of ribber needles, one set each cylinder and dial, and Table II showing only the total number of needles in the cylinder, it is necessary to add the equivalent of dial needles to obtain the total number of needles in the ribber to correspond with a footer for which it is intended to make rib cuffs or tops.

**Table I.**

| Diameter of Cylinder | Total Number of Needles | Needle Gauge | Needles Per Inch |
|---|---|---|---|
| 3½-inch | 166 | 48 | 15.1 |
| 3½-inch | 230 | 48 | 20.9 |
| 3½-inch | 220 | 54 | 20 |
| 3½-inch | 280 | 54 | 25.5 |
| 3½-inch | 266 | 70 | 24.2 |
| 3½-inch | 340 | 70 | 31 |
| 3¾-inch | 178 | 48 | 15.1 |
| 3¾-inch | 246 | 48 | 20.8 |
| 3¾-inch | 240 | 54 | 20.4 |
| 3¾-inch | 300 | 54 | 25.5 |
| 3¾-inch | 286 | 70 | 24.2 |
| 3¾-inch | 360 | 70 | 30.5 |

**Table II—Ribbers.**

| Diameter of Cylinder | Total Number of Needles | Needle Gauge | Needles Per Inch |
|---|---|---|---|
| 3½-inch | 106 | 36 | 10.71 |
| 3½-inch | 130 | 36 | 13.18 |
| 3¾-inch | 114 | 36 | 10.60 |
| 3¾-inch | 150 | 36 | 13.92 |
| 3½-inch | 80 | 24 or 36 | 8.09 |
| 3½-inch | 104 | 24 or 36 | 10.51 |
| 3¾-inch | 86 | 24 or 36 | 7.99 |
| 3¾-inch | 112 | 24 or 36 | 10.40 |

Seamless knitting machines are obtainable in cylinder diameters ranging from 2 inches up to 4½-inch gauge, and ranging from 10 gauge up to 70 gauge. The total number of needles by twos or even numbers in cylinders run from 32 in small diameter cylinders up to 360 for 3¾-inch—70 gauge or more for larger diameters if desired.

Ribber diameters range from 1¾ inches up to 7 inches and from 10 gauge up depending on the total number of needles desired in the respective diameters.

Larger diameter seamless or sinker machines (latch needle) and rib machines are better known as sinker body, rib body, and spring needle underwear, circular knit, body, or sweater machines.

Circular latch-needle and spring needle body machines use the term cut for designating the number of needles per inch or needle slots per inch in the cylinder. The diameters obtainable range from 7 inches to 36 inches with needles per inch from 6 to 34. These are multi-feed machines running from 4 to 16 ends, knitting that many courses for each revolution. A 20-inch, 20-cut, 12-feed machine means the cylinder is 20 inches in diameter, with 20 needles per inch, and 12 knitting points around the cylinder to knit 12 ends of yarn at one time. With this brief statement on body machine gauge, full-fashioned gauge must receive brief attention also.

The exact universal method for figuring gauge on full-fashioned machines depends on the number of needles per inch. The machine gauge designation is also the needle gauge designation. Two-thirds of the designated full-fashioned gauge gives the number of needles per inch in the head. Gauge, in Table III, represents the number of needles per 1½ inches.

**Table III—Full-Fashioned.**

| | |
|---|---|
| 39 gauge x 2/3 | 26 needles per inch. |
| 42 gauge x 2/3 | 28 needles per inch. |
| 45 gauge x 2/3 | 30 needles per inch. |
| 48 gauge x 2/3 | 32 needles per inch. |
| 51 gauge x 2/3 | 34 needles per inch. |
| 54 gauge x 2/3 | 36 needles per inch. |

Each head usually consists of a needle section of 14-inch width.

With the foregoing gauge information we are now prepared for a brief discussion with fabric illustrations and abbreviated gauge tables, including a few words regarding sinkers, transfer points and looper points.

The gauge of sinkers for knitting machines is determined within certain limits from the diameter of the machine, the gauge of the needles and the number of needles in the machine or needles per inch. (The total number of needles and needles per inch are given, because of the different methods of measuring diameters which divided into the total number of needles in different machines give a varying number of needles per inch. If all diameters were measured from the centers of the hooks of central hook needles, then this consideration would not be necessary for needles per inch would be a standard.)

Sinkers are gauged in thousandths of an inch, and some sinkers are of two thicknesses, as 0.015/0.010 sinkers. This has a two-fold purpose, the thick part being the butt end, increasing ruggedness where the cams work against them, and the thin part on the

**Table IV.**

| Needle Gauge Torrington | Needle Shank Thickness Torrington | Needle Gauge Torrington |
|---|---|---|
| 10 | .... | 10 |
| 12 | .048-.049 | 12 |
| 18 | .040-.041 | 18 |
| 24 | .034-.035 | 24 |
| 36 | .027-.028 | 36 |
| 48 | .024-.025 | 48 |
| 54 | .020-.021 | 54 |
| 60 | .019-.020 | 60 |
| 70 | | 70 |

**Table V.**

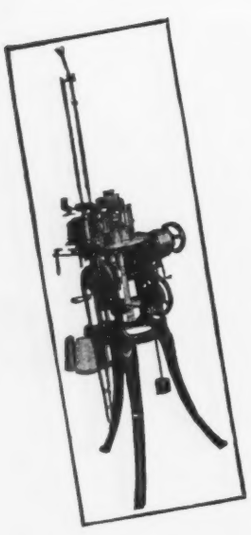
| Needles Per Inch Ribbers Fidelity 2¾" to 7" Diameter | Needles Per Inch Knitters S&W and Banner 2" to 4½" Diameter | Sinker Size Banner | Transfer Point Banner |
|---|---|---|---|
| 2.60 3.13 | .. | .. | .160 |
| 3.20- 5.97 | 4.7- 8.4 | .030 or .040 | .090 |
| 6.00- 7.98 | 7.1-10.2 | .025 | .075 |
| 7.90-10.51 | 10.0-12.9 | .025 | .075 |
| 10.38-14.10 | 11.7-15.6 | .015/.010 or .015 | .066 |
| | 15.1-20.9 | .\$15/.010 | .055 |
| | 18.2-25.5 | .010/.007 | .045 |
| | | | |
| | 24.2-34.1 | | |

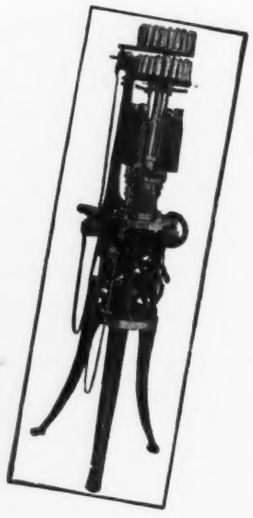
**Table VI.**

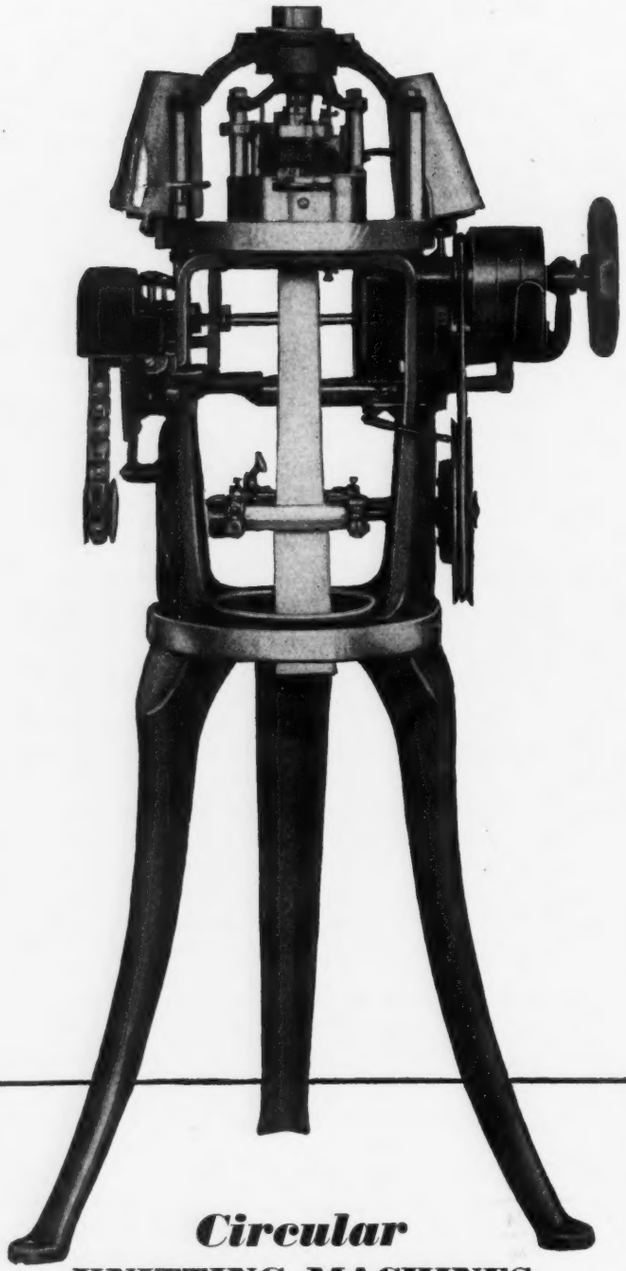
| Knitters 3½" 3¾" Needles Total Per Inch 3½" 3¾" | Loopers Points per In. Points |
|---|---|
| .. .... | .. |
| 84 7.7- 7.1 | 8 |
| 96 8.7- 8.2 | 10 |
| 112 10.2- 9.5 | 12 |
| 128 11.7-10.9 | 14 |
| 160 14.6-13.6 | 16 |
| 176 16.0-15.0 | 18 |
| 200 18.2 17.0 | 20 |
| 220 20.0-18.7 | 20-22 |
| 240 21.9-20.4 | 22-24 |
| 260 23.7-22.1 | 24-26 |
| 280 25.5 23.8 | 26-28 |
| 300 27.7-25.5 | 28-30 |

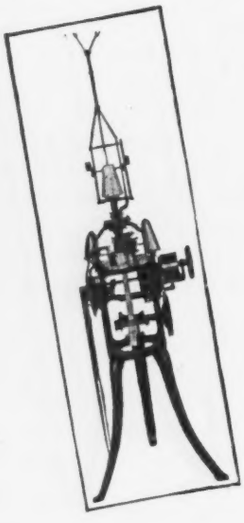
# ALL TRUE-RIB

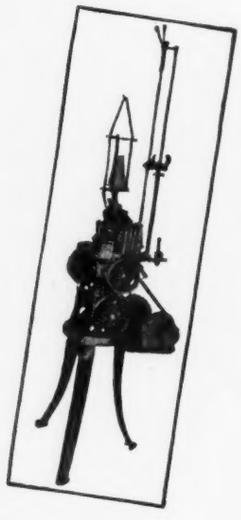
(Patented or patent pending)

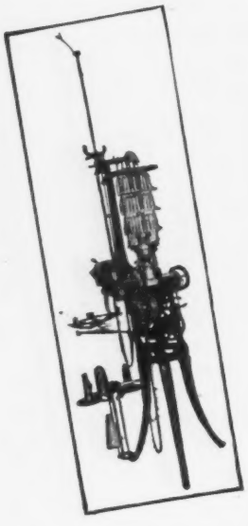


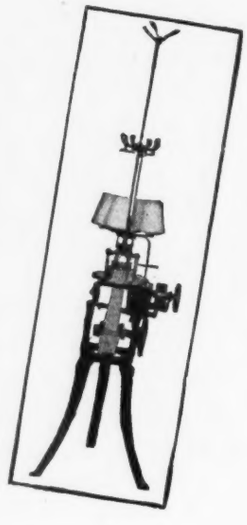












*Circular*

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**BRAIDING MACHINES**
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**PHILADELPHIA, PA.**

THE FIDELITY UNIVERSAL RIBBER

**Table VII.—Approximate Yarn Sizes for Knitting Machines.**

| Rib, Machines Cotton Count | Cylinder Needles Per Inch | Latch Needle Seamless Machines Cotton Count | Latch Needle Seamless Machines Rayon Deniers |
|---|---|---|---|
| 6s/1 | 6 | 3s/1 | .. |
| 10s/1 | 8 | 5s/1 | .. |
| 16s/1 | 10 | 7s/1 | .. |
| 24s/1 | 12 | 10s/1 | .. |
| 30s/1 | 14 | 16s/1 | 350 |
| 36s/1 | 16 | 20s/1 | 250 |
| ... | 18 | 25s/1 | 210 |
| ... | 20 | 30s/1 | 175 |
| ... | 22 | 35s/1 | 150 |
| ... | 24 | 40s/1 | 135 |
| ... | 26 | ... | 125 |
| ... | 28 | ... | 100 |
| ... | 30 | ... | 85 |
| ... | 32 | ... | 75 |

"knitting business end" allows for narrower cuts in the inside sinker ring which has less space for cuts than the larger circumference outside sinker ring.

Transfer points are measured in thousandths of an inch and designated both by this measurement as well as by arbitrary numbers.

**Table VIII—Full-Fashioned Gauge and Yarn Sizes.**

| Gauge | Needles Per Inch | One-Thread Single Cotton Count | Lisle and Mercerized Two-Ply Cotton Count | Silk 13/15 Denier | Rayon Denier |
|---|---|---|---|---|---|
| 36 | 24 | 24—36 | 40— 60 | .... | 150—200 |
| 39 | 26 | 32—40 | 60— 80 | 8 to 12 Thd | 125—175 |
| 42 | 28 | 36—48 | 60—120 | 5 to 10 Thd | 100—150 |
| 45 | 30 | .... | .... | 4 to 8 Thd | |

Gauge as applied to needles is a designation representing the thickness of the shank or blade, and this thickness is measured in thousandths of an inch, and in Tables IV, V, and VI, are shown the probable thickness limits for the corresponding gauges. These tables are very condensed for illustration of interdependent gauges, etc, discussed so far. (Needles are also numbered but numbers are not shown here.)

The approximate yarn sizes suggested in Table VII and Table VIII for use on the various gauges of ribbers, seamless knitting machines and full-fashioned

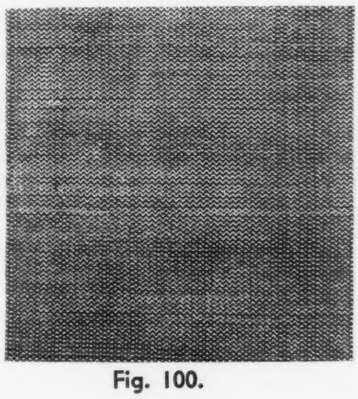


Fig. 100.

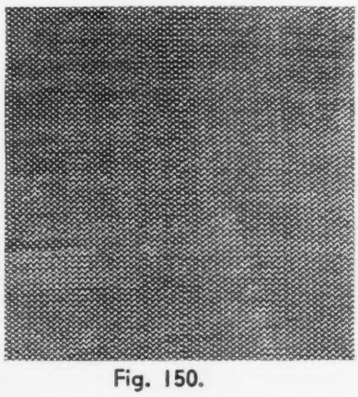


Fig. 150.

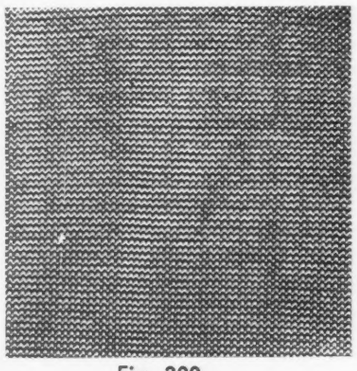


Fig. 200.

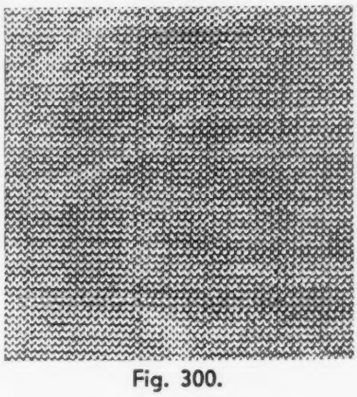


Fig. 300.

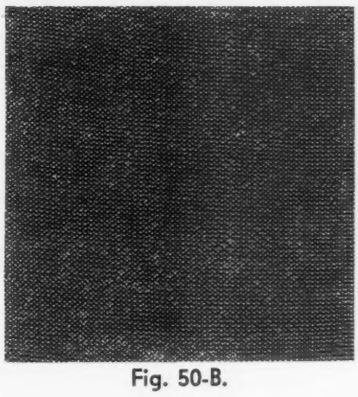


Fig. 50-B.

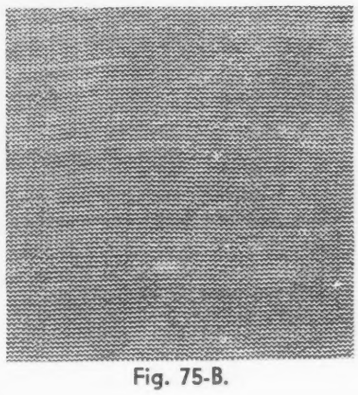


Fig. 75-B.

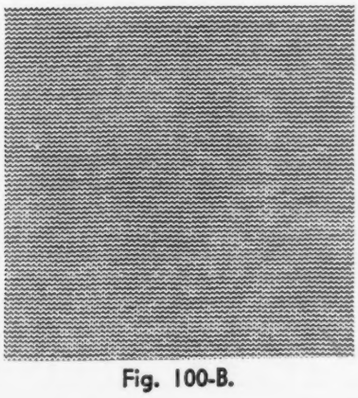


Fig. 100-B.

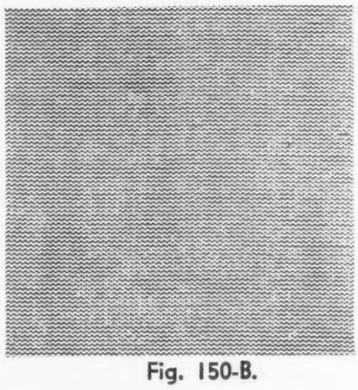


Fig. 150-B.

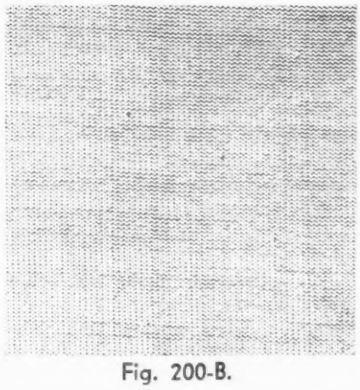
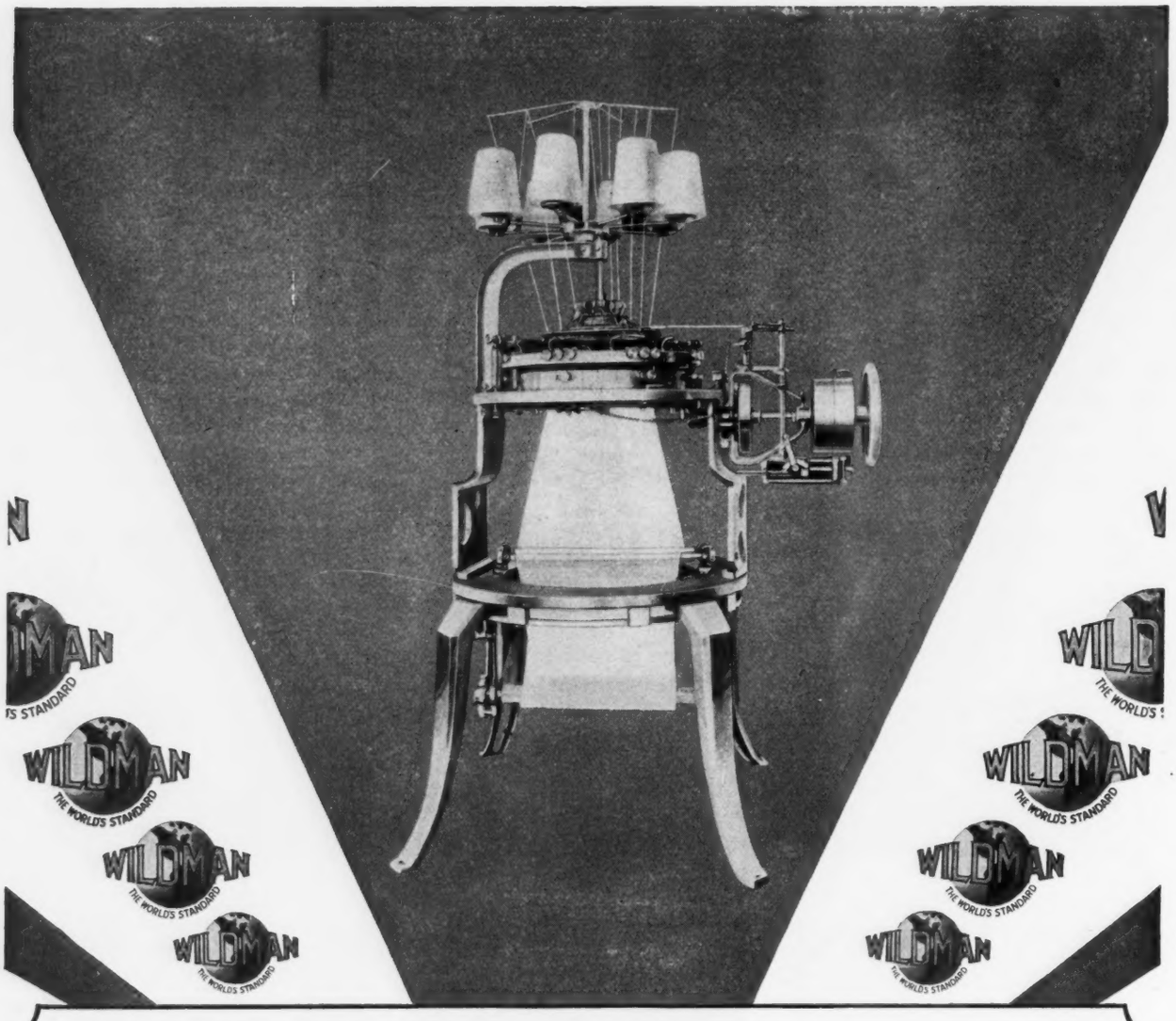


Fig. 200-B.



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## SPRING NEEDLE BODY MACHINE

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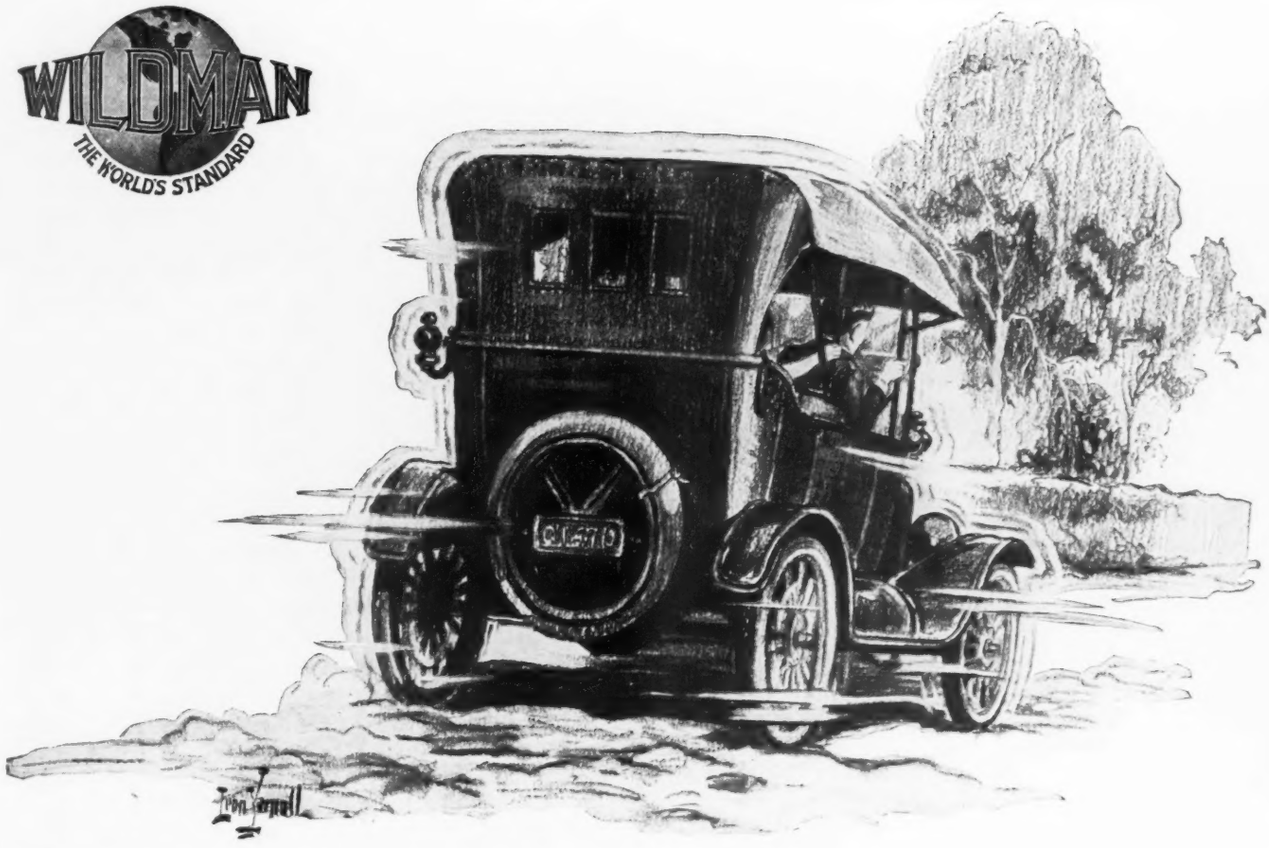
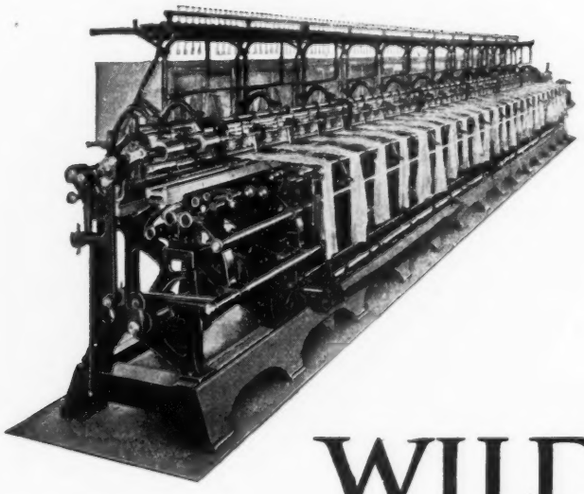


# You're bound to bounce more on a light chassis

A heavy chassis tends to eliminate bouncing and vibration. In the same manner the heavy base, upon which the legs of the new Wildman machine rest, eliminates vibration.



This feature is only one of many developments which are proving to be of great interest throughout the trade.

*Write for further information.*

WILDMAN MFG. CO.
*Full-Fashioned Division*
NORRISTOWN, PA.

# WILDMAN
## FULL FASHIONED HOSIERY MACHINE

knitting machines merely furnish an idea of the flexibility of knitting equipment. From this information it is evident how easy the different methods of designating gauge came about. Full-fashioned gauge measurements of course are universally standard and other types of flat knitting machines are also designated by the actual number of needles per inch.

Coarser or finer counts of yarn than those designated for certain gauges are determined more or less according to the kind of finished fabric desired. A certain gauge machine adjusted for a medium count of yarn without changing adjustments, will knit a tighter stitch and heavier fabric with a coarser count of yarn, and a looser stitch and more sleazy fabric with a finer count of yarn. By loosening the stitch on the coarse count fabric and tightening the stitch on the fine count fabric these two may be so knit that when finished to the same dimensions and stretch or elasticity as the medium yarn fabric, they will accordingly have less stitches or more stitches per square inch depending on the degree of difference in the counts of yarn used. Furthermore the poundage of yarn consumed per unit of fabric is almost directly proportional to the difference in counts of yarn or at least near enough so that it may be assumed so for estimating yarn consumption and yarn costs.

Along these lines attention is called to Figs. 300, 200, 150, and 100 herewith. These were all knit on a 220-needle, 3½-inch, 48-gauge machine. Fig. 300 is 300 denier rayon; Fig. 200 is 200 denier rayon; Fig. 150 is 150 denier rayon; and Fig. 100 is 100 denier rayon. All of these, knit on the same machine but re-adjusted for each knitting to give the same degree of stretch and finish under the same conditions, illustrate the flexibility of the knitting machine for a wide range of adjustment for different yarns and fabrics.

Further illustrations are Fig. 200-B (200 denier viscose fabric); Fig. 150-B (150 denier viscose fabric); Fig. 100-B (100 denier viscose fabric); Fig. 75-B (75 denier viscose fabric); and Fig. 50-B (50 denier viscose fabric). These were knit on a 28-cut (28 needles per inch) Wildman spring needle circular knit machine, and are shown in the gray. They were knit at the same time on the same machine under the same conditions without change of adjustments. From these extremes in yarn counts usable, it is self-evident how important proper adjustment of the machine is, for different counts of yarn and different qualities of fabric. With proper adjustment of stitch, knitting and finishing, it is possible to make fabric on the same machine match coarser or finer gauge machine fabrics by using coarser or finer counts of yarn respectively, and that the proper selection of yarns and proper adjustment of the machine have an important bearing on the finished fabric.

Only high spots of gauge and its relation have been touched on, and just sufficiently to realize that quality knit goods have their beginning in the knitting and require the experience of those who know their knitting.

## Tonnage Production of Sodium Hydrosulphite is Announced by Royce Chemical Company.

The Royce Chemical Company, Carlton Hill, N. J., manufacturers of textile chemicals, is now producing sodium hydrosulphite under the trade name of Vatrolite, in large tonnage on a commercial scale. They are one of the few manufacturers of this product in the United States. This material is used for the reduction of vat colors and as a stripping agent. Vatrolite is packed in 250-pound containers, and, the company points out, all shipments are subjected to careful checking, to conform with essential standards of quality.

:: :: ::

## Single Top Hosiery Stronger, Says United States Testing Co.

Hosiery knit with the weltless, or single-top construction offers greater resistance to garter strain than hosiery of average construction having the double welt, according to tests recently made by the United States Testing Company on both seamless and full-fashioned, ladies' weltless hose and hosiery knit with the usual double fabric welt. The announcement of the tests states:

"It has been the contention of manufacturers of single-top hosiery that the single-top construction was stronger because, they claim, when the garter is fastened to the double welt strain is invariably taken up by but one layer of the fabric, while the other layer shows slack between the welting point and point of garter contact. Obviously, the slack in the second layer can only be taken up after the taut fabric has stretched. For this reason, say the advocates of single-top hosiery, the welt is not of itself a true re-inforcement, the re-inforcing qualities of the construction depending upon the skill with which the wearer attaches the garter. True re-inforcement is claimed for the single-top because of the construction of the fabric above the former hemming point.

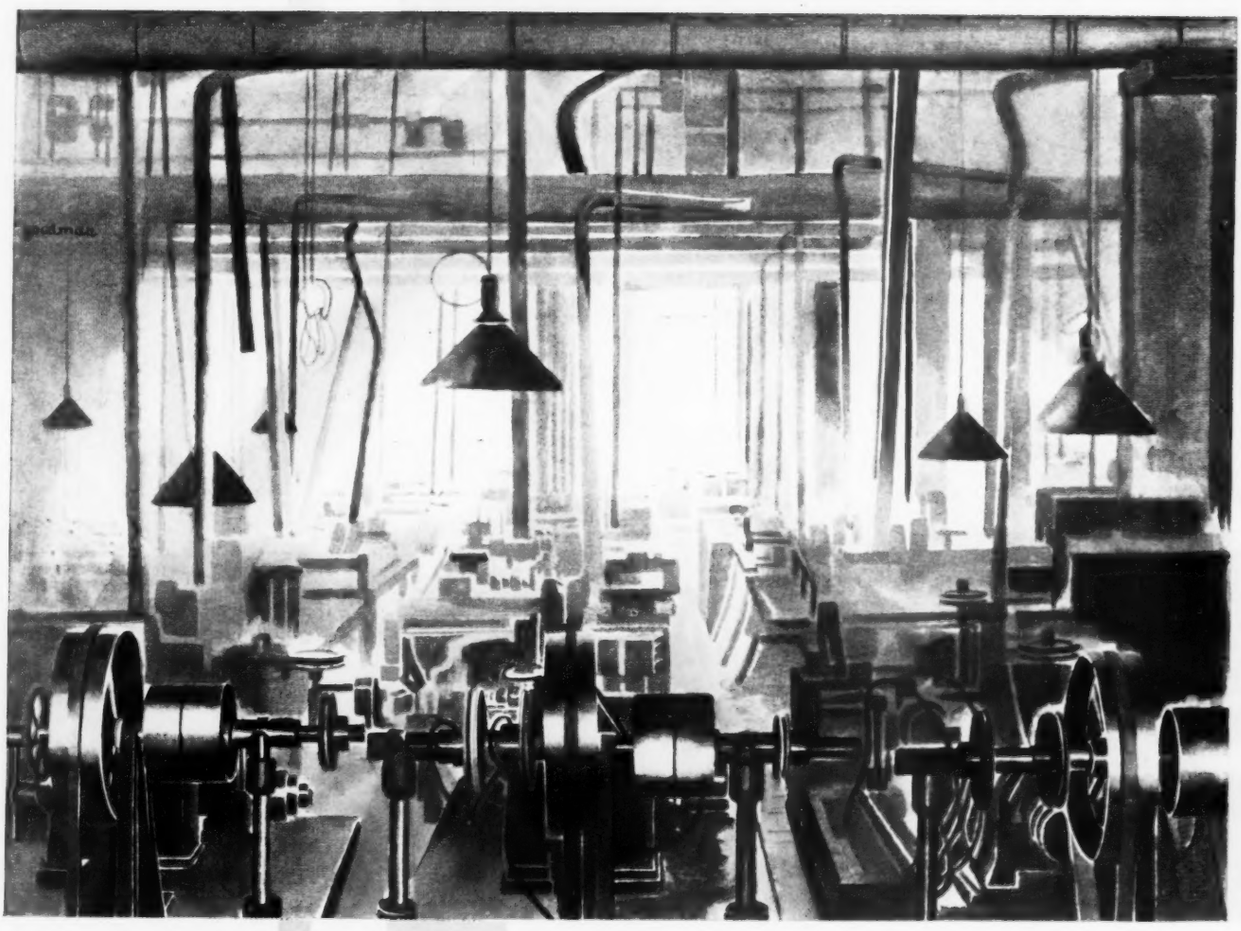
"For the tests conducted by the United States Testing Company, 11 different types of hose were used, representing average run of hosiery found in the market today. The samples included full-fashioned hosiery with double-top and picot edge, seamless hosiery with both automatic and sewed welt and both full-fashioned and seamless single-top hose. Samples were conditioned for four hours in an atmosphere of 70 degrees F. temperature and 65 per cent relative humidity before testing.

"Specimens tested were gripped in ordinary fashion with the garter. The strap of the garter was lamped into the top jaw of the machine for measuring tensile strength and the stocking was wound around the bottom jaw. In this manner the specimen was strained until a rupture occurred at the garter grip. Considerably more strain was required to rupture the single-top hosiery of both seamless and full-fashioned hosiery than was required on hosiery of both these constructions having the double welt. In the report written subsequent to the tests, the United States Testing Company said, 'From the results of the tests made, it is evident that the single-top hose are in general superior in tensile strength at the garter grip and will withstand more strain before rupturing, than will the double-top stockings tested."

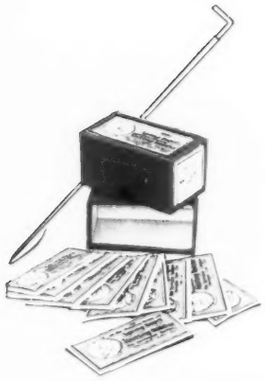
:: :: ::

## Bulletin on Special Frame Design Motors.

Ohio Electric Mfg. Co., 5900 Maurice Ave., Cleveland, Ohio, have issued Bulletin No. 211 illustrating some of the special designs of motors made by this company, which specializes in special motors, that is, motors having a special frame, end bell, shaft, winding or speed, length of leads or method of mounting, or some other special feature. Illustrations of sleeve bearing motors with thrust bearing for vertical mounting with shaft up, and the same motors for vertical mounting with shaft up, and the same motors for vertical mounting with shaft down, are included.



# TORRINGTON *SPRING BEARD* NEEDLES



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# TORRINGTON *Latch* NEEDLES

# An Apparatus for Testing Dyestuffs Under Artificial Light

## Examining Dyed Work from Two Angles, Under Both Artificial Light and Daylight

By W. Ashton Daniel, Dyer, Wiscassett Mills Co. Knitting Department.

ONE can imagine what a great deal of trouble a dyer may get into if he employs fluorescent colors in his formulae, yet, every year, swatches are sent to the hosiery mills throughout the country, dyed with such dyestuffs. By fluorescent, we mean the quality existing in certain transparent bodies of giving off, under the action of light, a color, differing from their own.

In order to secure the proper balancing of colors for harmonious effect, and not have these changes, the dyer must choose from the large number of available dyestuffs, those which, among other necessary characteristics, are fast or fairly fast to artificial light. It is provoking as well as annoying to any hosiery dyer to match a shade on a cloudy day and then, when the batch is boarded and observed on a sunny day, to find that the match he considered good was not a match at all. There have been quite a few instances where swatches dyed with fluorescent dyes have been submitted to the dyer for matches. There is only one way to match such a sample and that is for the dyer to employ the same dyestuffs as was originally used to dye the sample swatch. However, this would not be satisfactory to the hosiery trade because buyers do not want and will not buy hosiery dyed with such unstable dyestuffs that will cause the shade to change under every change of light.

Being unable to find out what dyestuffs were used in dyeing the fluorescent swatches without considerable trouble and inconvenience to all concerned, and probably not even then, there is only one thing left for the dyer to do and that is to compromise and try to strike a medium between the swatch as it looks in daylight and as it looks under artificial light.

Fluorescent swatches can easily be detected in a little device the writer has constructed which he will call the arti-daylight comparator. This device will also show the dyer and any others who are interested whether fluorescent dyestuffs are being used in a formula. In order to avoid turning out work dyed with unstable dyes, as mentioned, this arti-daylight comparator is constructed in such a way as to allow the observer to get a good view, from at least two angles, of the same dyed stocking under both artificial light and daylight.

This apparatus consists of a base board nine inches wide and twenty inches long. Fastened to this board, by two small hinges is a small box-like compartment with only a side, a top and two ends. Inside this compartment, situated in the center of the back end board, as in Fig. 2 is placed a light socket with a flush plate receptacle protruding through the end to allow a drop cord to be plugged in. In this socket is placed a forty-watt light bulb over which is a pear-shaped metal reflector. A small square is cut in the top six by six inches. This is to allow the observer to view the stocking from above. One side is left off so that the observer may also get a side view of the stocking. If necessary, in order to make the compartment a little darker when viewing the stocking from the side, a small book or piece of cardboard may be placed over the square cut in the top. This will serve to keep out any daylight that may enter the top when a side view of the stocking is made. This apparatus is easy to make, very practical and does a world of good in as much as it eliminates any guessing or doubt. The facts are right before you.

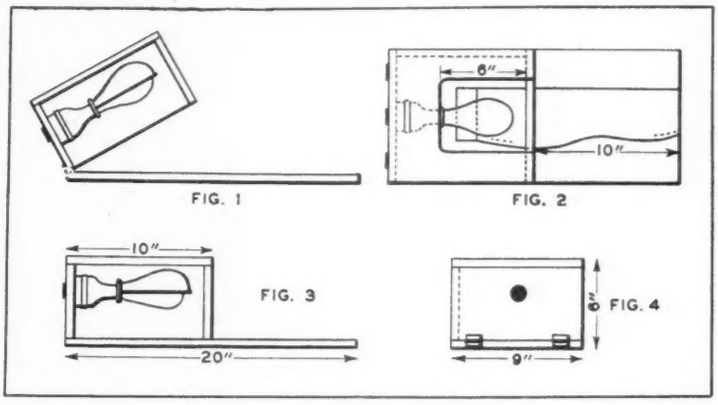
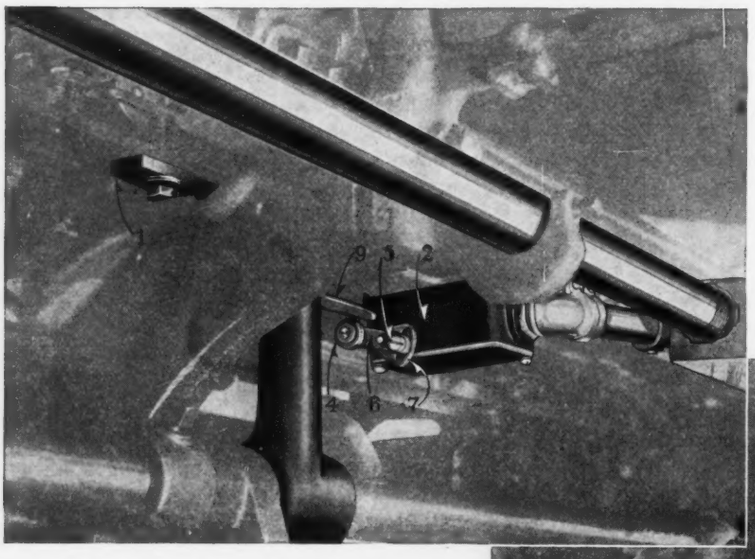


FIG. 1 FIG. 2 FIG. 3 FIG. 4

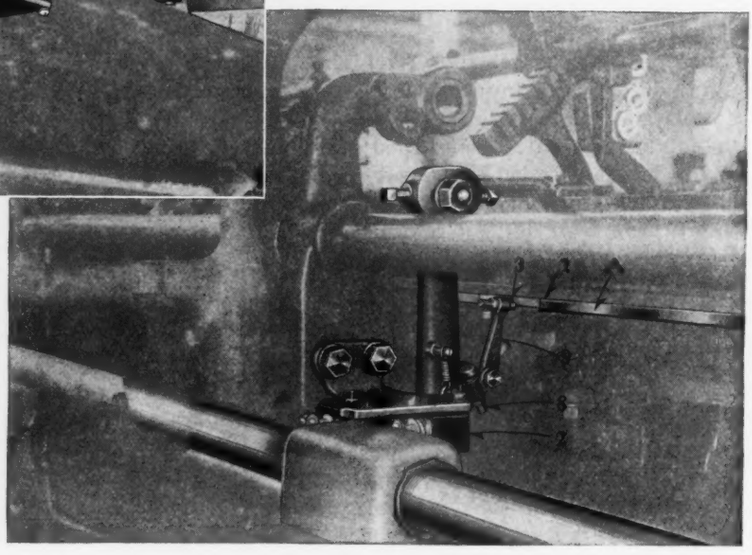
In using this comparator for testing dyes to artificial light the following procedure is recommended: First, make a one per cent dyeing in a beaker as usual and when dried, place the stocking on the base board of the arti-daylight comparator as in Fig. 3 and lower the upper portion of the comparator so that half of the stocking is on the inside of the compartment and the other half of the stocking on the outside. The light is then turned on and if any change whatsoever takes place it is readily discernable by the eye. One can easily see what a great help this is to the modern hosiery dyer and, yet, be such an inexpensive apparatus. This device can be used not only by hosiery dyers, but by any dyer of textile commodities.

*Incorporating that*

# "Ounce of Prevention"



*The Coulier Motion Safety Switch*



**IT is rare indeed that anything ever happens to the Coulier Motion of a Reading Machine. But, since no metal or no operator is infallible, there exists the possibility of "something going wrong" with this mechanism.**

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**The parts of the machine utilized for the operation of this switch are one of the Back Catchbar Levers and the Slur Cam Connecting Bar. By means of a cam (1—Fig. 1) the switch is kept closed so long as the Coulier Motion is operating properly, and is opened only when the Coulier Motion fails to function.**

## TEXTILE MACHINE WORKS

**READING, PENNA.**

# The Wet Treatment and Dyeing of Cotton Knit Goods

**THIS discussion is based upon the methods used by the author in the wet treatment and dyeing of cotton knit tubular fabric, and his recommendations represent his own opinions and practices. . . . . .**

WHETHER cotton tubular knit goods is to be dyed or bleached, the scouring of the material is one of the most important factors. The degree of scouring that is necessary for any particular piece of goods depends entirely upon the amount of foreign matter, such as motes, specks, oil and dirt, present in the raw material. Carded yarn should be given a better scour than combed yarn.

Should the mill have orders on hand to process 4,000 or 5,000 pounds of material, the kier of course should be used. However, lots of from 100 to 600 pounds or even 800 pounds can easily be handled by a machine of the reel type. Each string of knit goods should have a length of about 110 yards in order to give uniform results on the reel machine.

Soft water, of course, in all processes gets the call over hard water. The water should also be clear and free from iron. There are short tests to determine the presence of iron and the hardness contents of the water. Water which is not clear is likely to discolor the fabric.

Especially in the scouring and bleaching it is necessary to use soft water to prevent the formation of insoluble soaps and other precipitations on the fabric. Several good water softening machines are on the market and today few mills are without one of these types.

### Scouring.

The ratio of water to the material for the reel type machine should be 20 parts to 1 part (by weight) during the operation of scouring. After the goods are loaded on the machine, the steam is turned on and the chemicals necessary for scouring are added to the tub. For a good scour, some mills use one per cent of caustic soda, two per cent of soda ash and one per cent of pine oil. The presence of pine oil in the scour greatly accelerates the wetting-out of the cotton. This operation should be at the boil for about one and one-half hours.

To insure whiter goods preparatory to bleaching, two and one-half per cent of soda ash and two and one-half per cent of sodium peroxide at the boil for one hour is sometimes used with very good results. Should this method be used, several good washes are necessary before the bleaching operation is performed.

### Washing.

It is imperative that enough time be allowed for each washing operation; that is, do not hurry the step, but give enough time for the wash water to thoroughly rinse. After scouring a warm rinse at about 130 degrees Fahrenheit for ten minutes should be given the material, followed by flooding the tub over the flood holes, which are cut into the sides of the machine. This should be followed by a cold rinse for ten minutes, and again the tub flooded. The goods are then ready for bleaching or dyeing as the case may be.

### Bleaching.

Without removing the goods from the machine, the water volume is made up to ten parts to one part of material, and the bleach added. The bleaching solution may be purchased ready for use as sodium hypochlorite, or it may be made up just prior to being used on the lot being bleached.

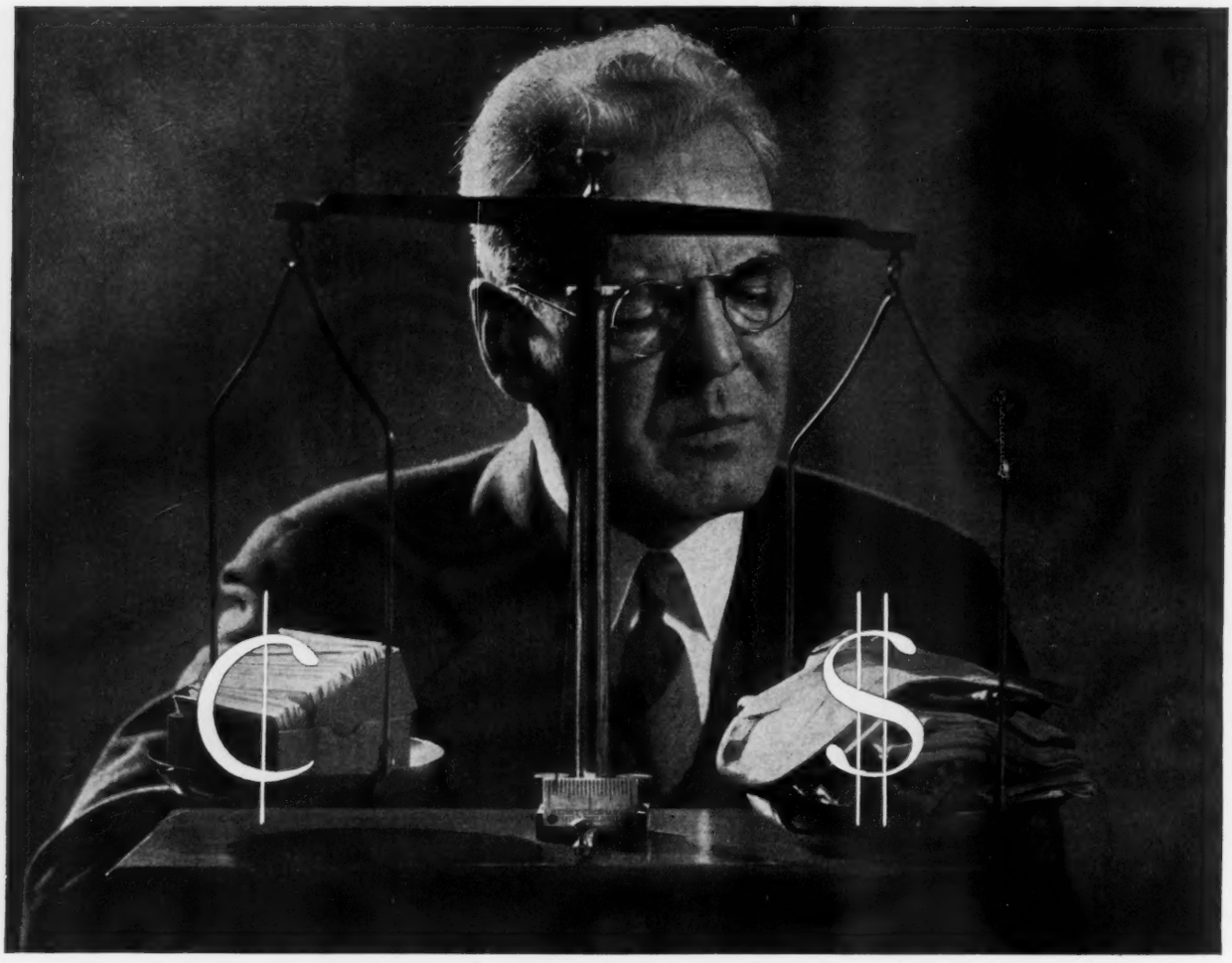
The bleaching solution for a 500-pound lot of goods can be made up as follows: Run a wooden barrel one-third full of water and stir about 15 pounds of soda ash into the water, after which 6 pounds of caustic soda is stirred into the solution. The barrel is next filled with water up to within 8 or 10 inches of the top and chlorine gas from a platform scale is allowed to bubble into the solution in the barrel until about 7½ pounds are weighed off. With the addition of this solution the bleaching process is carried on for from 1½ to 4 hours, depending upon the degree of whiteness desired and also upon the grade of material being processed. The best temperature for this process is 80 degrees F., although some bleachers prefer to bleach up as high as 100 degrees F. Great care should be exercised to insure careful handling of the temperature as too high a temperature often produces bad results.

After the goods are bleached, at least two good washes are necessary and again the tub should be flooded before draining the wash water. Should the flooding not be carried out, dirt particles floating on the surface of the water will settle upon the goods causing innumerable spots.

The sour is next in the procedure and for this operation the regular volume in the tub is maintained. One pint of muriatic acid 20 degrees Baume for each 100 pounds of goods will give a sufficient sour. This operation should be carried on for at least ten minutes. As sulphuric acid produces insoluble compounds, muriatic acid is preferred for this work.

### Neutralizing.

As a neutralizer, sodium bisulphite is often used, although there are many other neutralizers on the market which will do very good work. One-half pound of sodium bisulphite for each 100 pounds of material



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should neutralize any chlorine remaining in the goods after the sour. Starch iodide solution should be used as an indicator to show that the last traces of chlorine are removed. About 20 grams of starch and 5 grams of potassium iodide are boiled with 1 liter of water to make this solution.

Two rinses are then given, the first being a warm rinse at about 120 degrees F., followed by a flood. The last water should be below 100 degrees F., and to remove any odor that may have been caused by the sodium bisulphite, about 1 quart of ammonia 26 degrees Baume is added to this rinse. The goods are removed from the tub in this liquor.

### Softening and Blueing.

Instead of using the ammonia in the last rinse, a softener especially made up for cotton knit goods may be added. Where a very soft feel is required, this addition of a softening compound is essential.

There are many good softeners on the market for cotton knit goods, but some mills prefer to make up their own softening compounds. A good softener may be made up as follows: Boil 5 pounds of white stearic acid in about 10 gallons of water and then add 1 pint of 26 degree Baume ammonia (in one gallon of water). Mix this solution thoroughly and use 1 gallon of this solution for each 100 pounds of knit goods.

Although the bleacher may have done his work well, the bleached goods usually contain a slightly yellowish tinge which requires blueing. The more yellow the bleach, the redder should be the blueing added.

The blueing may also be added to the last rinse along with the ammonia or the softener. It is imperative that the finish bath be free from acid. The decomposition of the coloring matter in the presence of acid is caused by the action of heat in drying the goods and even slight traces of acid are sufficient to start the reaction. Attempts have been made to use Methylene Blue and Methylene Violet, but cotton takes these dyes up too quickly and the results, as a rule, are uneven. A gram or two of Acid Blue or Acid Violet per 100 pounds of goods will give a good "blued white."

### Dyeing Cotton Knit Goods.

The dyeing of cotton knit goods with substantive dyestuffs may sound very easy, yet many times experienced dyers have been guilty of producing poor results. Without a doubt, these poor results have been produced by the omission of some important operation in order to save either time or expense. A short cut to good results often ends in bad work instead. It is imperative that each operation be carried out in detail as to time and temperature so as to insure faultless work.

As was mentioned in a preceding paragraph, a good scour is of the greatest importance. Specks, waxes, etc., will show up very plainly after dyeing if not removed, especially when mode shades are dyed. Just as good a scour should be given to material which is to be dyed as is given to material to be bleached.

Prior to the dyeing operation a bleach or sometimes a semi-bleach is given to the material after it is thoroughly rinsed following the scour. A semi-bleach can be obtained by using 2 quarts of sodium hypochlorite (with a strength of 16 per cent Av.Cl. by weight) for each 100 pounds of material. The temperature of this operation may be run at about 90 degrees F. for about 15 minutes. Should knit goods containing quite a bit of dirt be in process, a quart more of sodium hypochlorite could be used. This bleach usually is sufficient for a bottom for light shades. Most dark shades will not require any bleaching.

After bleaching, a cold water rinse for ten minutes should be given to the material, and then a fresh bath containing one per cent of sodium bisulphite (on the weight of the goods) should be made up. After running the material in this solution for 10 or 15 minutes, the lot is then ready for the dyeing operation.

Various chemicals are used in the bath as assistants in the dyeing operation. Pine oil is used to a very great extent as it assures level dyeing and better exhaustion of the dyebath. One to three pounds of pine oil to each 100 pounds of knit goods gives very good results. When dyes with poor level dyeing properties are used, it is advisable to add one-half or one per cent of soda ash to the dyebath.

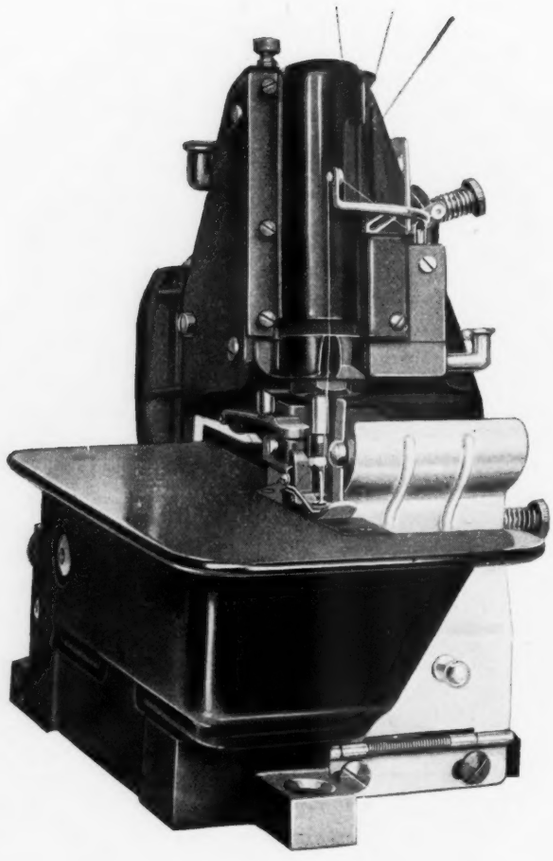
There are many direct dyestuffs which give fine results on cotton knit goods when properly handled. Direct Yellow NN, Fast Yellow 4GL, Direct Orange RS, Brown BBN, Catechu 3G, Scarlet 4BS, Scarlet 8BLN, Blue RW, Sky Blue 6BX, Green GB and Direct Black GX00, are among those dyestuffs which give satisfactory results. These dyestuffs are commercially fast to washing.

After the dye is thoroughly dissolved and added to the dyebath, the tub should be allowed to run from 5 to 10 minutes until the dye has circulated evenly throughout the material before turning on the steam. The steam is then turned on and the bath brought to the boil in about one-half hour. After the temperature has been kept at the boil for about 15 minutes a sample is taken and common salt added should the shade not be up to the standard. It must be remembered that an addition of salt should be made only with the steam turned off and that the steam should not be turned on until the machine has been run for about 10 minutes. The bath should then again be brought to the boil for 10 or 15 minutes before a sample is again taken.

Where a shade has been run before and it is known just how much salt is required, it is best to add that amount of salt in two portions rather than all at one time. The same precaution should be taken in regard to having the steam turned off when each addition is made in order to avoid color streaks.

When the correct shade is obtained the tub may be flooded and the excess dye removed. A fresh bath is then made up and the knit goods removed from the machine from this water. Should the fabric require softening, a softener can be added to the last rinse before removing the lot.

Cotton knit goods should not be left to lie around in a wet condition. Immediate extraction should be followed by drying. Color blotches and streaks are sometimes caused by goods lying too long in trucks in a wet condition.



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## Silk or Cotton Seaming Thread for Fine Gauge Chiffon Number?

A question, and several advance answers, published together here in view of the timeliness of the subject. Other answers are invited.

### The Question.

EDITOR COTTON:

We are making a fine gauge all-silk chiffon full-fashioned stocking, and concluded that such a stocking should be seamed with a silk thread. We had the throwster make up some seaming thread from regular tram silk by twisting 5 threads right 8 turns, then plying two of these 5 threads left twist 10 turns, making a 10-thread silk. This silk ran well on the machine, and made a beautiful seam, but it does not wear satisfactorily, as it chafes in the high heel where the shoe rubs and the seam opens up. I have tried other sizes and combinations without satisfactory results. I have also tried spun silk in different counts, but this does not have a smooth thread finish and does not run well on the needle.

The most satisfactory all-around thread I have found so far for this purpose is a 90s/3 Sak. This runs well on the machine, makes a neat seam, and will wear as long as the stocking.

In dyeing all silk goods with a cotton seam it is necessary to add cotton dyes to the dyebath to dye the seam, which is one objection, of course.

I would be glad to have some of your full-fashioned readers give their opinions and practice on this subject, in detail.

CONTRIBUTOR NO. 6054.

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### Some Answers.

EDITOR COTTON:

The question which "CONTRIBUTOR NO. 6054" has brought up with regard to the use of cotton or silk seaming thread in fine gauge chiffon stockings, is very interesting at this time. This man said that, concluding that such a stocking should be seamed with a silk thread, he secured a special seaming thread of tram silk, in which five threads were twisted right 8 turns, then plying two of these left twist 10 turns, making a 10-thread silk. He said this ran well on the machine, but did not wear satisfactorily, chafing in the high heel where the shoe rubs, and the seam opening up. He said also that he had tried spun silk for the seaming thread, with unsatisfactory results, and that the most satisfactory all-around thread he had found is a 90s/3 Sak, which he says runs well on the machine, makes a neat seam, and will wear as long as the stocking.

I wish to advise that our own experience is similar to his. As a result of unsatisfactory service in some of our chiffon goods where silk was used for the seaming thread, we are returning to a previous arrangement, by leaving the silk needle thread in, but using a 100s/3 for the looper thread. It is my opinion that this change will have no effect upon the sales appeal of the stockings, and I am sure that any such possible effect will be greatly overbalanced by the added service of cotton in the back seam. You will understand that with high twist silk in the stocking and with high twist silk in both needle and looper, that the friction of the threads against each other at wearing points like the heel causes the different silk threads to cut each other like a file. This trouble will be greatly minimized by having one thread of cotton. While pure silk of the same count as any given number of cotton sewing thread gives much greater tensile strength than the cotton, it will not stand up half as well under friction or agitation as cotton will.

CONTRIBUTOR NO. 6056.

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EDITOR COTTON:

I was interested to read the letter from "CONTRIBUTOR NO. 6054", who states that for seaming an all-silk chiffon full-fashioned stocking he finds a cotton yarn to be better than silk yarn. I would say that we are using an 80s/3 Sak cotton yarn. We have found

◆ ◆

**WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.**

◆ ◆

this to be very satisfactory, making a very neat seam, and at the same time not giving the dyer a great deal of difficulty, although he does have to add a certain amount of cotton dye to take on this seam. Of course, this doesn't present much of a problem to him because we reinforce the toes of practically 75 per cent of our numbers with cotton. We are making all net styles with a few exceptions in fancy lace tops, and we have to be very careful with the seams.

We have tried 10-thread silk, but did not find it to wear satisfactorily. We have also experimented with spun silk, and although this ran very satisfactorily, we felt that the additional expense did not warrant its use.

It has been our experience that the cotton seam holds up better, and it gives the dyer very little difficulty. I would suggest that "CONTRIBUTOR No. 6054" continue with the cotton seam, even though it does require an addition in the dye. I am sure that the same experience that he has had on the pure silk thread will also appear on the spun silk thread, and it would not give satisfactory wearing qualities that cotton provides.

CONTRIBUTOR No. 6060.

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EDITOR COTTON:

Our opinion on seaming yarn for all-silk full-fashioned hosiery is almost identical with that of "CONTRIBUTOR No. 6054", who pointed out that he had found that a silk seaming yarn would not hold up in wear, and that the seam would open up, and that he uses a 90s/3 Sak. yarn for seaming.

It is possible to use 80s/3 Sak. in place of 90s/3, but the latter is more satisfactory.

By using the proper dyeing formula, the seaming yarn can be dyed to match the balance of the stocking. We certainly recommend the use of cotton seaming yarn over a yarn of silk.

CONTRIBUTOR No. 6059.

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EDITOR COTTON:

With regard to seaming fine gauge, all silk chiffon full-fashioned hosiery, which subject was brought up by "CONTRIBUTOR No. 6054", we have come to the same conclusion that he presented—that to use a silk thread in the seam does not give adequate wear, and that a high grade cotton yarn is best for seaming.

We tried seaming our silk work with spun silk at first, but gave this up as unsatisfactory. We also started seaming with 90s/3 Sak. seaming yarn, but gave this up in preference to 50s/2 Sak., which we found made a little neater seam and gave satisfactory wear.

The only silk yarn that could be used for the seaming that would give satisfactory wear, I imagine, would be silk sewing thread which is used for clocking purposes, etc., but I have never tried this so I really cannot give you any first-hand information.

CONTRIBUTOR No. 6057.

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EDITOR COTTON:

I am pleased to answer the inquiry of "CONTRIBUTOR No. 6054" with regard to seaming thread for a full-fashioned all-silk chiffon stocking. I note this man found a silk seaming thread to be unsatisfactory.

We use nothing but 80s/3 or 90s/3 up to and including a three-thread stocking. It is true that this makes it necessary to add cotton dyes to the dye bath, but this has never proved a serious objection.

In making goods finer than three-thread, we have found a 10-thread properly twisted to be very satisfactory. Our thread is made of 5-threads with 8 turns to the right, plying two of these, but only giving them 6 to 6½ turns to the left.

In making tests, we had 12 pairs of stockings worn by 12 different girls; not one reported the seams breaking in this test.

CONTRIBUTOR No. 6058.

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## The Importance of Boarding.

**Some suggestions on this process, which is very vital to the production of quality hosiery.**

EDITOR COTTON:

Although there is little ever said about boarding hosiery, it is one of the most important steps in the process of their manufacture. I heard a salesman, who sells the entire production of four big hosiery mills, say that boarding is one of the most essential points in finishing hosiery. It makes no difference what kind of high-priced yarn the stockings are knit from, or how well they are made or dyed, or how expensive the dye is that makes them fast colored, or how carefully they are boxed—if they are not carefully boarded, all of these things are wasted, making the stockings look cheap although they are of a high grade.

The tops must be evenly boarded, the yarn in the toe must be pulled out, the seams of the heels should be placed on the forms evenly, making the toe and heel straight. A good test to see that the seams of the toe and heel are straight is to stick a pin in one side and if it comes out on the other side in the same position, the toe was placed correctly on the form. This applies as well to the heel.

It is important, therefore, to teach the boarders how to do their work right; teach them to be careful. not only in boarding, but in laying their work on the boards to be carried into the finishing room. The hose should be placed on the boards in neat stacks, for they are still slightly damp, and wrinkles pressed in and allowed to dry will cause the pairers to have lots of re-boards. If the overseer of this department will keep a close check on the boarders, and the pairers will cooperate with him, the work will be much better, with fewer reboards and fewer complaints from the customers.

The pairers are to pick out all re-boards, for which they are paid a liberal price, and send them back to the boarders, and the boarders are charged back for the cost of picking them out plus the cost of re-boarding them. A careless boarder will soon find that he is losing money instead of making it, and will try to improve his work.

If each employee of a hosiery mill could only be made to realize that his work is a part of a great pattern, which must be made as nearly perfect as pos-

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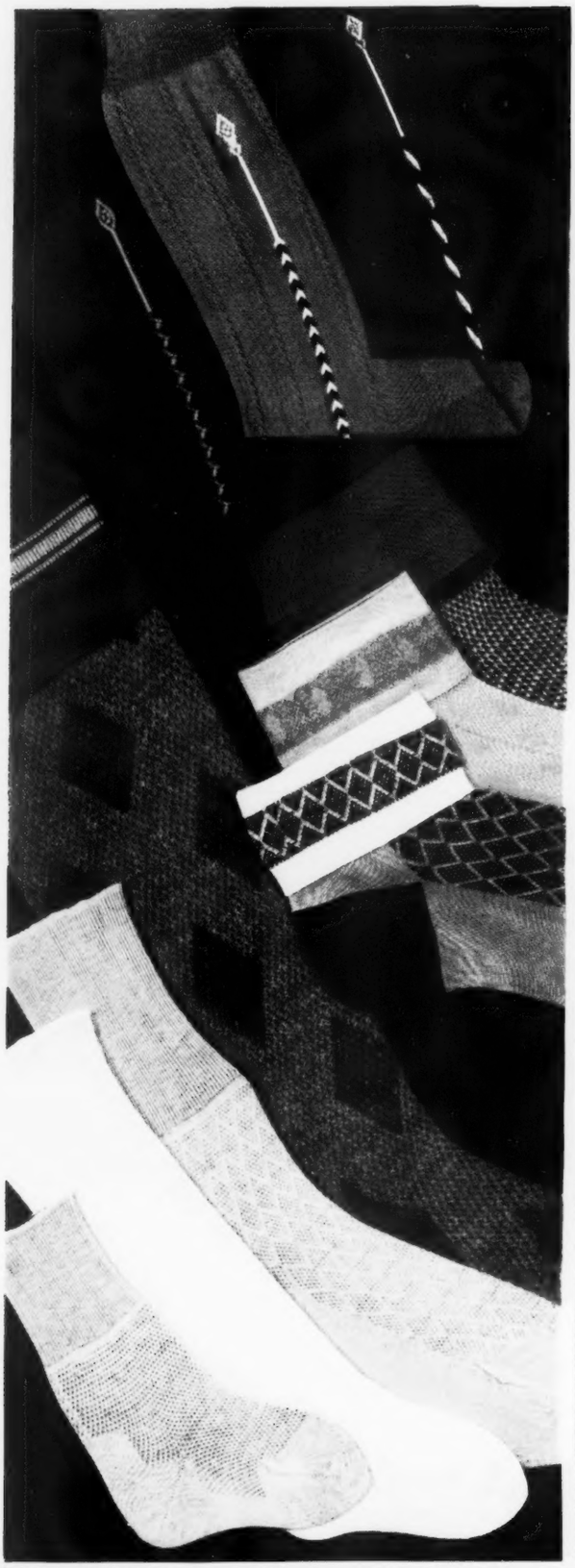
Single-Top is the most important construction development for ladies' seamless hosiery in many years. Banner Single-Top with genuine picot edge and anti-ravel stitches in and below the garter region gives increased elasticity, greater resistance to garter strain and 15% more production per machine. Exclusive with Banner and leased on moderate terms for application to Banner machines only.

Banner Mesh Attachment, 26 selections, applicable to all Banner high cylinder machines from 2" diameter up to and including 70 gauge. Low cylinders changed to high at nominal cost, for applying mesh attachment.

**BANNER** THE WORLD'S MOST COMPLETE LINE OF



● **FOR HALF-HOSE**

Wrap Stripe, Automatic True-Rib-Top, Split-foot, 12 Step, Mesh, Jacquard, Plain Banner machines

*Wrap Stripe Hosiery shown by courtesy of Great American Knitting Mills*

● **FOR GOLF-HOSE**

12 Step, Jacquard, Mesh, Rib-to-Toe, Plain Banner machines

● **FOR LADIES'**

Mesh, Single-Top, Nib Jack, Split-foot, Rib-to-Toe, Plain Banner machines

● **FOR CHILDREN'S**

Wrap Stripe, Jacquard, Rib-to-Toe, 12 Step, Mesh, Plain Banner machines

## BANNER WRAP STRIPE MACHINE

18 color feeds, 14 steps. Double or triple color change in vertical designs, or simultaneous color change in all verticals if desired; 5 yarn changes and binder; high splice and double sole. The Banner Wrap Stripe machine knits any yarns or plated combinations. With more than four years successful mill operation behind it the Banner Wrap Stripe machine stands out as the leader for all genuine wrap stripe production.

## IMPROVED BANNER SPLIT-FOOT MACHINE

Knits leg and instep from single cone of yarn, eliminating yarn change defects and uneven dyeing. No trace of fringe where silk instep joins reinforcement. Separate fashioning device for each section of the hose saves fixer's time in sizing, contributing to lower operating costs. Narrow extra high splice and triple toe. New low heel permits "white foot" production for higher priced lines.

## BANNER TRUE-RIB-TOP HALF-HOSE MACHINE

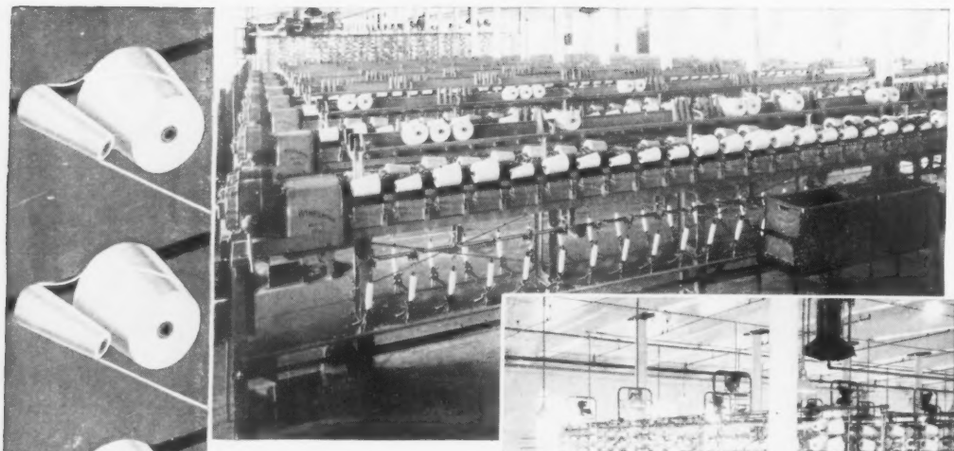
Automatically knits French welt true-rib-top plain half-hose, or in combination with 12 Step Attachment and Universal Striper. The True-Rib-Top Half-Hose machine is a fast producer and reduces knitting costs by eliminating hand transfer—equipped with 5 yarn levers and binder, spliced heels and toes.

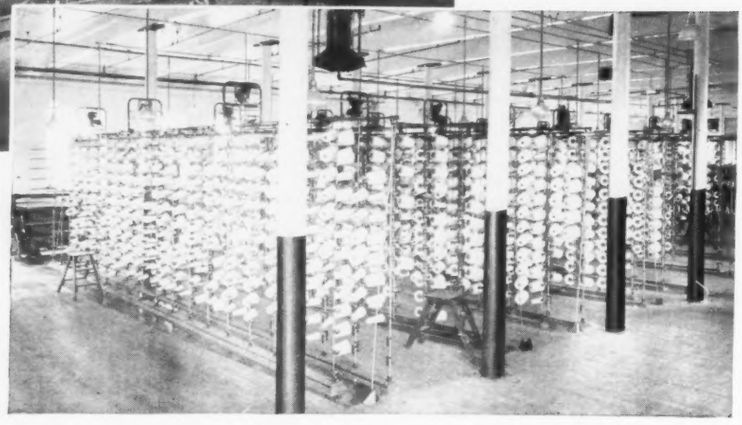
## HEMPHILL COMPANY

PAWTUCKET, Rhode Island — 93 Worth St., NEW YORK

PHILADELPHIA 6822 N. Gratz St. — CHATTANOOGA James Bldg — HIGH POINT, N. C. Commercial Bank Bldg.

# HOSIERY MACHINES





LEESONA

# SOMETHING TO REMEMBER

FULL SIZED CONES wound on the No. 40 Universal Winder are 8″ at the base and weigh 4 lbs.

Two cones are placed in a magazine creel, thus placing back of the warper 200,000 yards of No. 30's yarn. This quantity of yarn as a supply to the warper reduces the expense of creeling, as when a cone is exhausted another is tied in without stopping the operation of the warper. The imperfections have been removed from the yarn in the process of winding, and the yarn being delivered by absolutely uniform tension from the creel, insures as nearly perfect beams as can be obtained by any process.

## UNIVERSAL WINDING COMPANY
BOSTON

322

# UNIVERSAL WINDERS

sible, that one little slight in the beginning will be the proverbial mountain in the end, I am sure that all the work would be nearer perfect.

W. H. H. (S. C.)

## Causes of Dial Running Fast and Slow.

**Some further opinions on causes of varying speeds which result in trouble at transfer. What is your experience?**

EDITOR COTTON:

I notice on page 102 of the January issue the problem stated by "CONTRIBUTOR No. 6011" who says that on one of his Model H H 220-needle reverse plaiting machines, he is having trouble with the dials running fast and slow.

This trouble is not an uncommon one on H H, R I and K machines. The causes are many and varied, the remedies are likewise. In a new machine right from the factory it is usually a poor assembly job; in an old machine it is an entirely different problem.

It is my opinion that this man's trouble is that the dial and cylinder in this machine are not in perfect alignment. This has been caused by the dial not having been centered with the cylinder when the machine was assembled, or the cylinder and cam rings have been removed to do some repair work, and in being replaced, have gotten out of center with the dial, or vice versa.

Usually the cross-bar and complete dial assembly can be removed and replaced without getting it off center. If this is an old machine, he should make certain that the gear ring is not badly worn as this would cause the cylinder to "wabble." In case the cylinder has been removed to replace broken walls, the replaced walls should be ground perfectly true with the others in the cylinder. Some men file them by hand. They should be ground with a tool post grinder in a lathe for best results as this keeps the outside circle of the cylinder in good shape.

If the cam ring has been removed to replace a worn or broken jack cam, the cams should have been properly cleaned to avoid hard grease or particles of metal getting between the jack cams on the cam ring and forcing the cylinder to one side.

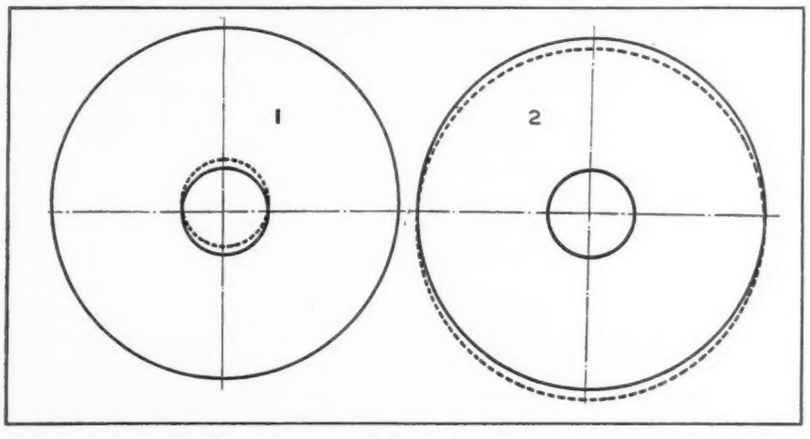
Sometimes new jack cams are too thick, and if not ground to the same thickness as the cam removed it would throw the cylinder to one side, especially if it had a worn gear ring or a cylinder not properly repaired.

All other cams on the cam ring should be examined carefully to be sure that none presses against the cylinder.

Then, I would recommend moving the bevel gear No. 5555 to the left so it meshes into the gear ring as far as possible without binding, and then moving the auxiliary racking pawl lever cam No. 6274 to the right, against the frame of the machine, and tightening securely, which will keep the bevel gear from moving from right to left while transferring and prevent a back lash on all gears that help drive the dial providing they are meshed properly.

The latch ring bracket should have two dowel pins to keep it in place, in addition to the two screws. Some fixers tamper with these or remove one or both to enable them to move the latch ring, trying to stop various kinds of trouble. This of course is entirely wrong and will throw the dial off center.

If all of the cams and adjustments mentioned here are correct, there is to my mind but one thing to be done and that is to re-center the dial by removing the cross bar and re-setting it, using a centering jig which is furnished by the machine manufacturers. It should be made certain that the needles are in a perfect circle, as needles out of line will throw the jig off.




If the outsides of two discs, one of which has the hole off center, are put together, the holes will show out of line as in Circle 1. If these are put on a shaft with the holes lined up, the outsides will be off center as shown in Circle 2 . . .

What has been said here will apply equally to H H plain and spiral, Model K plain and spiral, and also R I machines.

In the accompanying sketches, the solid line, Circle 1, shows the hole exactly in the center. The dotted line, Circle 2, is of the same size but with the hole 1/32-inch off center. If you will imagine two discs with these different centers, on the same shaft, one above the other, turning independent of each other in the same direction, this will give a reproduction of a dial and cylinder out of center, causing the fast and slow condition described.

CONTRIBUTOR No. 6034.

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EDITOR COTTON:

I have read in the January issue the question of "CONTRIBUTOR No. 6011" who explains that he has a Model H H reverse plaiting machine which he says

gives him trouble with the dials running fast and slow and causing trouble in the transfer.

I presume that he means that the dial gets ahead or behind the transfer point. This may be caused by the gears not being adjusted closely enough, thereby causing back lash, or if the machine has run for a great length of time the gears may be worn. It also is necessary to be certain that the dial is centered properly. The machine manufacturers furnish a device with which it is possible to adjust the dial for correct center.

Below the cylinder head on the main driving gear there is a smaller gear attached which drives the dial. By this gear it is possible to adjust the dial forward or back. The dial should be adjusted so the transfer bits come directly over the head of the needles when transferring, so that the hook of the needle can go through them and receive the stitches when the hooks and cast-offs pull back into the dial. A good many drop stitches are caused by the hooks when they are not properly tensioned. In this case the hooks will work forward and backward while running and drop the stitches.

Adjusting the dial and dial cams should be attempted only by someone thoroughly familiar with them, as this is a very delicate operation.

CONTRIBUTOR No. 6023.

## Testing Welt Stretch.

EDITOR COTTON:

On ribber machines which make tops for hose, some means must be had for checking the welt stretch of these tops occasionally as they come from the machines. The accompanying illustration represents a regular wooden boarding room form cut out to the dimensions shown. Line *A* represents the welt stretch we expect from a Wildman double feed French welt machine, 3½-inch, 110/110 needles. The welt of the top is brought over the board first and pulled down to the line *A*. If the top is too tight, the welt will break out before it reaches this point.

CONTRIBUTOR No. 6024.

## Applying Double Sole and High Splice Attachment.

**How to put this attachment on B-5 machines equipped with four-step progressive sinker reverse plaiting.**

EDITOR COTTON:

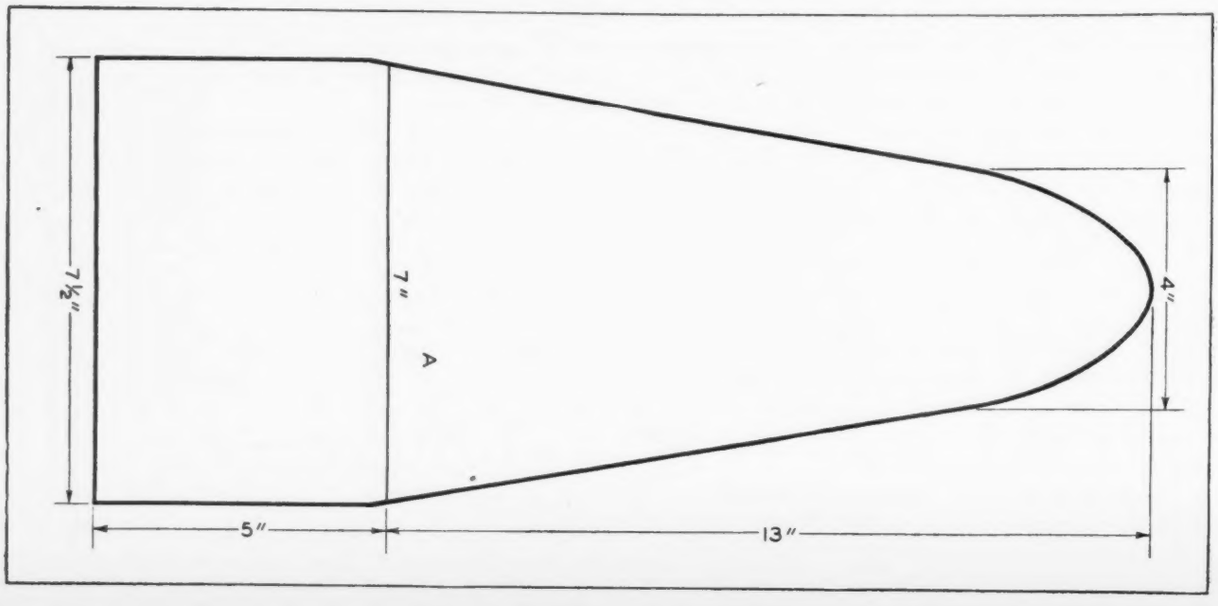
You have published an inquiry from "CONTRIBUTOR No. 6018" who asks for a discussion of the methods used to put double soles and high spliced heels on S. & W. Model B-5, 3½-inch, 220-needle machines equipped with four-step progressive sinker reverse plaiting attachment.

The matter of putting double sole and high spliced heels on these machines equipped with sinker reverse plaiting attachment is very simple. Of course, a great deal depends on the condition of the machine, such as the parts of the regular equipment that have been taken off when equipping with the plaiting attachment.

Let us assume that the machine has been changed to make ingrain or colored yarn styles where it is desired to use all four yarn fingers for leg yarns, leaving only one finger for heel and toe yarn. Under such conditions all of the double sole equipment must have been removed, and we judge that the machine under discussion has been so changed.

In this case it is merely necessary to exchange one of the regular yarn fingers for a double sole finger, to exchange the regular thrust bar and put in a double sole thrust bar, to replace the double sole cam on the outside sinker ring (if this has been taken off), and to add to the length of the cam on the main drum which operates the double sole thrust bar.

This is all that is necessary to be done to the machine in order to get the double sole and high spliced heel in the stockings. It will, of course, mean that use of one yarn is lost for the leg yarn but there are still three fingers available for this, which should be all that are necessary for the type of fancy half-hose that is mostly in demand at the present time—rayon and acetate, cross-dyed, reverse plait-



ing. It is of course evident that it is impossible to put a double sole in a fancy sock on a B-5 machine when it is desired to use four fingers for yarn in the leg.

For best results in plaiting the double sole, if an all-over pattern is being made, or any part of the pattern overlaps the high heel and double sole, the double sole yarn finger should be put between the two yarn fingers carrying the two leg yarns. This will keep the pattern in the high heel and double sole from appearing mottled, as it will allow much better plaiting, and the pattern will stand out distinctly.

CONTRIBUTOR No. 6022.

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EDITOR COTTON:

"CONTRIBUTOR No. 6018" inquires for a "discussion of the methods used to put double soles and high spliced heels on Scott and Williams Model B-5, 3½-inch 220-needle machines equipped with four-step progressive sinker reverse plaiting attachment." He says, "We are experimenting on putting double soles and high spliced heels on our machines at the present time, and any information I can get through your magazine will be greatly appreciated."

In dwelling on this question briefly, if the contributor will permit me to say so, the biggest handicap in working out a double sole is the lack of determination to do the job and have it over with. As a basis for beginning I would suggest reference to Scott and Williams general catalogue regarding high splicing on page 13.

In addition to a regular high splice and double sole attachment for these machines, it is possible to work otherwise, but I find standard equipment is usually best adhered to. On the four-step progressive sinker reverse work, in applying the double sole, if rayon is plaited over acetate and the regular Number One finger is used for the double sole it is advisable to use a fine denier acetate in said double sole to prevent a mottled pattern in the double sole.

If it is not desired to do this it will be helpful to place the double sole finger between the finger carrying the backing yarn and the face yarn to keep the pattern cleared up if a fine single cotton splicing yarn is used. It should not be necessary to have a plain high splice and double sole when only four progressive steps are available. However, if a change over on the attachment could be made so that selective type sinkers can be used it will be an easy matter to so design pattern to obtain plain high splice and double sole.

CONTRIBUTOR No. 6019.

## How About Your Lubricating Methods?

**Give this man your method of lubricating main bearings, etc.**

EDITOR COTTON:

I wonder why we should not get some discussion started about the best methods of lubricating our seamless machines. I do not mean the needles, sinkers, stitch cams and other little top jobs that the fixer usually takes care of every day. I mean the running gear, the main bearings inside the machine that carry the burden of the day's grind day in and day out and which are so easily and so frequently neglected.

Some mills, I presume, keep a man for this purpose, whose duties are to see that the machinery is kept well lubricated at all times, but this proves a little expensive for the small or medium-sized mill. Other mills regard that as a part of the fixer's duty, and take it for granted that he is looking after that part of his work along with his other duties, which in many cases is not true. Fixers are just like men in other lines—they have a tendency to want to put things off that are seemingly going along all right. Consequently that part of their work is put off indefinitely in many cases, and the result is worn bearings, which throw the entire machine out of balance, causing other bearings to wear abnormally, gears to wear off on one side; auxiliary and drum pawl plates become worn, causing the machine to kick wrong, as we say, or the drum doesn't get the proper move at the proper time, causing a smash-up which in many cases breaks 50 to 100 needles and lots of times even more that that. In fact, there is no end to the trouble caused directly or indirectly from lack of proper lubrication in the gearing of the machines.

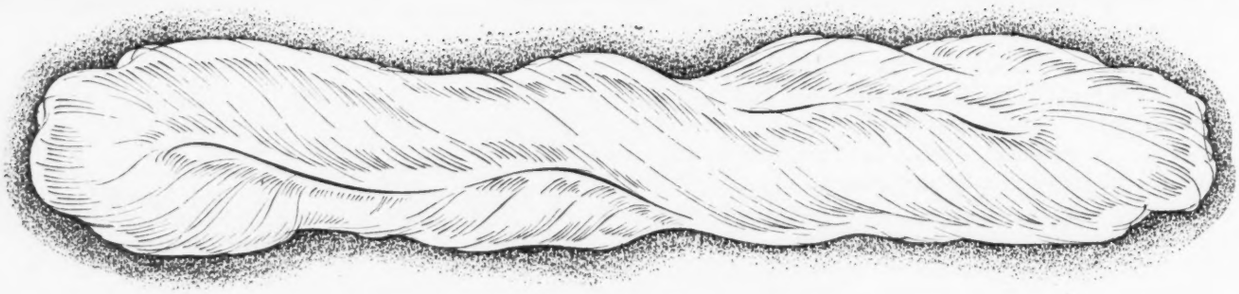
I have no intention of pulling anyone away from the system he may now be using, to the one we have recently adopted. I will say, however, that it has worked very satisfactorily for us, and if any reader doesn't already have a satisfactory system of oiling, it might work equally as well for him.

We have a boy on a job which does not take up quite all of his time, yet we must have this work done and the boy who does it we consider indispensable. To make out a job for him, we require him to oil a given number of machines each day. To make this oiling thoroughly efficient, we give this boy a good oil can of the proper size, with a long spout that will reach all bearings in the machine. We also give him a grade of heavy oil which we consider good for the purpose for which it is being used. We also give him an instrument made for the purpose of opening up all oil holes so the oil will be sure to go to the bearing for which it is intended instead of running down through the machine onto the floor.

We require the boy to oil a number of machines each day, on a schedule which will get him over the entire lot once a week. We have impressed upon him so much the necessity of oiling the machinery that he almost regards it as a sacred duty. If it becomes necessary to leave any part of his work undone at any time he is always very careful to let it be something else besides oiling.

There is no way of estimating the loss sustained through lack of proper lubrication. I hope this letter will help someone who has not given this matter sufficient consideration, to adopt a system satisfactory to them, yet one sufficient and efficient for the purpose intended. I am sure it will save many dollars for the company in the replacement of worn and broken parts as well as seconds and waste.

CONTRIBUTOR No. 6049.



# ENKA'S *EVEN* filaments give Fabrics and Knitted Goods UNIFORM QUALITY

EXPERIENCE has shown that Enka yarns are completely satisfactory from two angles — the speed and economy of non-stop production and the quality of the finished product.

Many converters and manufacturers of fabrics, hosiery and underwear depend on Enka yarns to safeguard the quality of their product. These Mills have learned that Enka's uniform filaments assure uniform performance, good looks and wear.

*The fate of a fabric hangs by a thread.* Enka is a high quality non-stop yarn in everything the word implies: it is strong, even, fast running. Cones are treated with the finest winding oils. Every inch is in perfect condition — no discolored threads, no sour odor, no rotting or disintegration of the yarn itself. A high grade yarn that guarantees speed and economy of production.

We would like to put on a trial run at your own mill and demonstrate the superior results obtainable with our new dull Perlglo and our famous bright lustre yarns. Enka yarns are available in deniers from 50 to 300, in standard or multi-filaments. On weaving and knitting cones; on spools; in skeins, bleached or unbleached.

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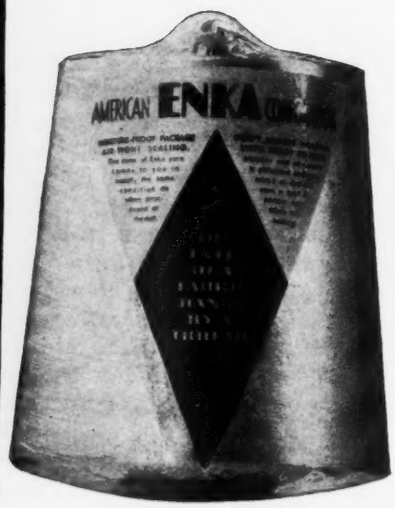

# The Yarn Market

**Philadelphia, Pa., March 17th, 1932.**

THE cotton yarn trade locally sees no nearby adjustment of prices to more nearly a parity with cotton. Even during the period of some weeks of firm prices for raw cotton, yarns were barely holding, dealers finding it impossible to advance their rates.

It appeared to observers on the side lines that yarns were at a price level where it might be reasonably supposed that some few manufacturers would, in any event, be disposed to buy yarns in anticipation of the business which prophets had been assuring the trade was just around the corner. The nearest approach to buying for future was when a buyer for an underwear manufacturer notified the trade he would receive quotations on 100,000 pounds of carded, 50,000 pounds for delivery April 1 and 50,000 on May 1. The same concern placed a like order, in quantity, some six or eight weeks before and was amazed, he said afterward, to receive at least one bid for less than 13 cents basis of 10s. The bids on the second lot were opened March 16, and the contract awarded a day later, to the lowest bidder, name not disclosed by the yarn trade.

Early in March an inquiry for 40,000 pounds of single combed peeler was in the hands of a half dozen or more dealers. In due course, the inquirer made a quantity purchase, but whether he took the 40,000 pounds was not revealed. Just prior to this mild stir over single combed peeler there was awakened some interest in two-ply combed peeler, which seemed to be associated with announcement by a leading mercerizer of an advance in all counts of mercerized yarns. The rise became effective after mercerizers had sold somewhat heavily, while quotations were showing much disparity and sellers seemed puzzled as to how to correct the unsettled state of the market. The advance, while apparently a result of an understanding among mercerizers, is understood to have had the effect of buyers regarding their purchases with more respect.

Several million pounds of mercerizing two-ply were said to have been taken by mercerizers just prior to or about the time of the flurry incidental to the price revisions on mercerized but there was no reflex of such a turnover, prices for combed peeler remaining unchanged. Singles subsequently were traded in at reported concessions, 38s said to have been sold for 29 cents, a few sales being consummated also for a half-cent more.

Around the middle of March, when the market for yarns appeared nearing a turn, carded was selling at 13 cents, basis of 10s single, for good yarn, very good fetching 14 cents, in instances, and ordinary being let go for 12 to 12½ cents. There were intimations from a few buyers of a desire to speculate in carded yarns at the then current prices shaded, but the desire was less intense when dealers said gently but firmly that speculation in yarns sold by them would have to be on the speculator's money, orders to be detailed and shipment dates specified at time of contracting. There remain undelivered much yarn contracted for when prices were cents higher than the March average.

Some of the dealers, and spinners selling through direct representation, have adjusted practically all of the old contracts in which buyers are delinquent as to details, and in a general way the trade is believed to have cleaned house and is ready to co-operate with spinners for a more nearly stabilized market. A southern spinner left this message with a local house recently: "as we are losing a cent a pound on 10s at 13 cents, curtail production, create a demand at 15, and make a profit of a cent a pound".

Philadelphia prices quoted on March 16 follow:

**Single Skeins.**

| | | | |
|---|---|---|---|
| 4s to 8s | 12 | 10s | 12½ |
| 12s | 13 | 14s | 13½ |
| 16s | 14 | 20s | 15 |
| 24s | 17 | 26s | 18 |
| 30s | 19 | | |

**Single Warps**

| | | | |
|---|---|---|---|
| 10s | 13 | 12s | 13½ |
| 14s | 14 | 16s | 14½ |
| 20s | 15 | 26s | 18 |
| 30s | 19 | | |

**Two-Ply Skeins.**

| | | | |
|---|---|---|---|
| 8s | 12½ | 10s | 13 |
| 12s | 13½ | 14s | 14 |
| 16s | 14½ | 20s | 15½ |
| 24s | 17 | 26s | 18 |
| 30s | 19 | 40s | 26 |

**Two-Ply Warps.**

| | | | |
|---|---|---|---|
| 10s | 13½ | 12s | 14 |
| 14s | 14½ | 16s | 15 |
| 20s | 15½ | 24s | 17 |
| 26s | 18 | 30s | 19 |
| 40s | 26 | | |

**Frame Spun Carded Yarn on Cones.**

| | | | | | |
|---|---|---|---|---|---|
| 8s | 12½ | | 10s | 13 | |
| 12s | 13½ | | 14s | 14 | |
| 16s | 14½ | | 18s | 14½ | |
| 20s | 15 | @15½ | 22s | 16 | @17 |
| 24s | 17 | @18 | 26s | 18 | @19 |
| 30s | 19 | @20 | 40s | 26 | |
| 30s dbl. carded | | | | 21 | @22 |
| 30s tying in | | | | 18½ | @19 |

**Carpet Yarns.**

| | | |
|---|---|---|
| 8s and 9s white warp twist | 13 | @13½ |
| 8s tinged tubes | 12½ | |
| 8s part waste | 11 | @11½ |

**Two-Ply Combed Peeler Skeins and Warps.**

| | | | | | |
|---|---|---|---|---|---|
| 8s to 16s | 22 | | 20s | 23 | @24 |
| 24s | 25 | @26 | 30s | 28 | @29 |
| 40s | 31 | @32 | 50s | 35 | |
| 60s | 39 | | 70s | 49 | @50 |
| 80s | 58 | @61 | | | |

**Single Combed Peeler Yarns on Cones.**

| | | | | | |
|---|---|---|---|---|---|
| 18s | 21 | | 24s | 23 | @24 |
| 30s | 26 | @27 | 36s | 27½ | @28 |
| 38s | 28½ | @29 | 40s | 29 | @30 |
| 50s | 34 | @35 | 60s | 38 | @39 |
| 70s | 49 | @50 | 80s | 58 | @61 |

**Mule Spun Carded Yarn on Cones**

| | | | |
|---|---|---|---|
| 10s | 19 | 12s | 19½ |
| 14s | 20 | 16s | 20½ |
| 18s | 21 | 20s | 21½ |
| 24s | 24 | 28s | 25 |
| 30s | 26 | 40s | 34 |

**Mule Spun Combed Peeler Yarn on Cones.**

| | | | |
|---|---|---|---|
| 10s | 24 | 12s | 25 |
| 14s | 26 | 16s | 27 |
| 18s | 28 | 20s | 30 |
| 22s | 31 | 26s | 32 |
| 28s | 33 | 30s | 34 |
| 36s | 37 | 38s | 39 |
| 40s | 40 | | |

**Tinged Insulating Yarns.**

| | | | |
|---|---|---|---|
| 8s | 12 | 8s-2 | 12 |
| 12s-1 | 12½ | 12s-2 | 12½ |
| 10s-1 | 13 | 10s-2 | 13 |
| | | 20s-2 | 15 |

# Known Quality
## SELLS THESE
# DURENE NUMBERS
## *By Various Manufacturers*

The name durene identifies the finest mercerized cotton yarn, and the quality merchandise into which it is knit or woven . . . Durene is stronger, more elastic, more absorptive, and more durable than ordinary cotton . . . Let us tell you how the durene label is aiding manufacturers in many lines — call or write.

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*Durene mesh vest and shorts — attractive, youthful, comfortable — from Marshall Field and Co.*

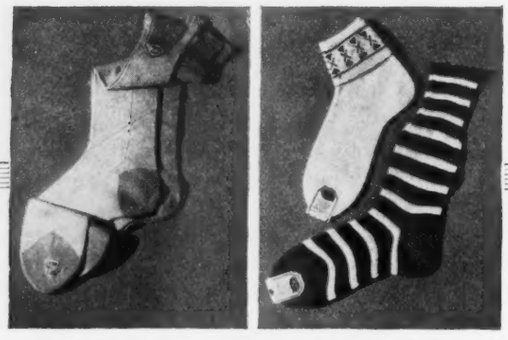
*See the Durene Display at the Knitting Arts Exhibition, Philadelphia, April 11 to 15. Adjoining booths 196 and 223 will show fine durene underwear, outerwear, hosiery, foundation garments, shoes, and many other types of merchandise now made of durene yarns. Be sure to see the durene display.*

*The Gotham Silk Hosiery Company offers soft fine durene welts in its new silk "Adjustables." — Style 852*

Durene
THE FINEST COTTON
QUALITY BEGINS WITH THE YARN

*Entirely without buttons is this boy's union suit of pebble mesh durene, also from The Globe Knitting Works.*

*Pebble mesh durene in an athletic pullover shirt from The Globe Knitting Works.*



*The Phoenix Hosiery Company shows this durable all-durene hosiery for men and children.*

# The KNIT GOODS MARKETS

PLANT OPERATION in full-fashioned hosiery mills in March was in large degree reduced to approximate requirements for taking care of firm orders. There developed a better balance of output with demand from distributors. In bringing this about, a considerable number of mills producing women's silk full-fashioned exclusively cut their running time to around two days a week. This was the case in inland Pennsylvania communities and in some instances as reported by manufacturers commenting on the situation, the recession was entirely unexpected. There were exceptions, of course, and these served to present shining examples of an unsettled condition.

A mill in Reading, organized about two years ago and making only 45-gauge stockings, has been operating day and night while some similarly equipped were entitled to operate not more than half time. There appeared a calm in the market for 45-gauge goods, and they were available at prices showing a variance of fully a dollar a dozen, this applying to comparable stockings.

### Lower Rates on Cheap Hosiery.

Buyers for leading large stores told of "no set prices" for the better classes of silk hosiery. Manufacturers said they had heard of breaks in the price structure, but had made no changes and were shipping out conservative quantities. It was the impression of a direct-to-retailer mill executive after returning from a tour of the trade that dealers seemed to be buying what they required but not a quarter dozen more.

The market for women's silk hosiery had taken a quiet turn, for which there were as many explanations as might be encompassed by unbridled imagination. There was one, and that covered all the rest—that the consuming public was not buying so much hosiery after having been loaded with holiday gift stockings and with spring just around the corner with new styles.

Prices for cheap hosiery were lower in March than in January, and 50-cent silk full-fashioned hosiery became a verity in at least two Philadelphia department stores of first magnitude. One was Strawbridge & Clothier's; the other, John Wanamaker's.

### Five-Toed Stockings Sold in Philadelphia.

The first mentioned led off, with 39-gauge goods, on the first floor, to the dismay of the basement department manager, who asked, "If the first floor is going into the half dollar business, what's left for the down stairs?"

A week or two later Wanamaker's had a 50-cent full-fashioned on sale in the basement—in strong contrast with a new arrival in the first floor hosiery department, where first showing was made of a five-toed stocking, a French product, priced $10 per pair—equivalent to one dollar per toe. It is for wear with evening shoes, described by Wanamaker's as "a pair of soles and a few straps, in which," the advertising said, "not everyone can expose her bare toes gracefully. The five-toed stockings give veiled allure and are sheer enough to allow your painted toenails to show through."

### Much Variety of Hosiery Construction.

Several pairs of the freak stockings were sold on sight, it was stated at the hosiery counter, where it was thought depressions would not affect the sales. Stockings with one toe formations, at $7.50 a pair, also are on sale.

Construction had much to do with the disparity in prices quoted for 45-gauge full - fashioned stockings during the confusion in this gauge. One large store took the precaution, in advertising a lot at 75 cents a pair, or three pairs for $2, to say, "these stockings are knit on 45-gauge machines". It was left to the presumption of the customer that they were *45-gauge knit*, whereas, as has been the case, a few needles may be omitted, making the stockings the equivalent of a 39-gauge machine product.

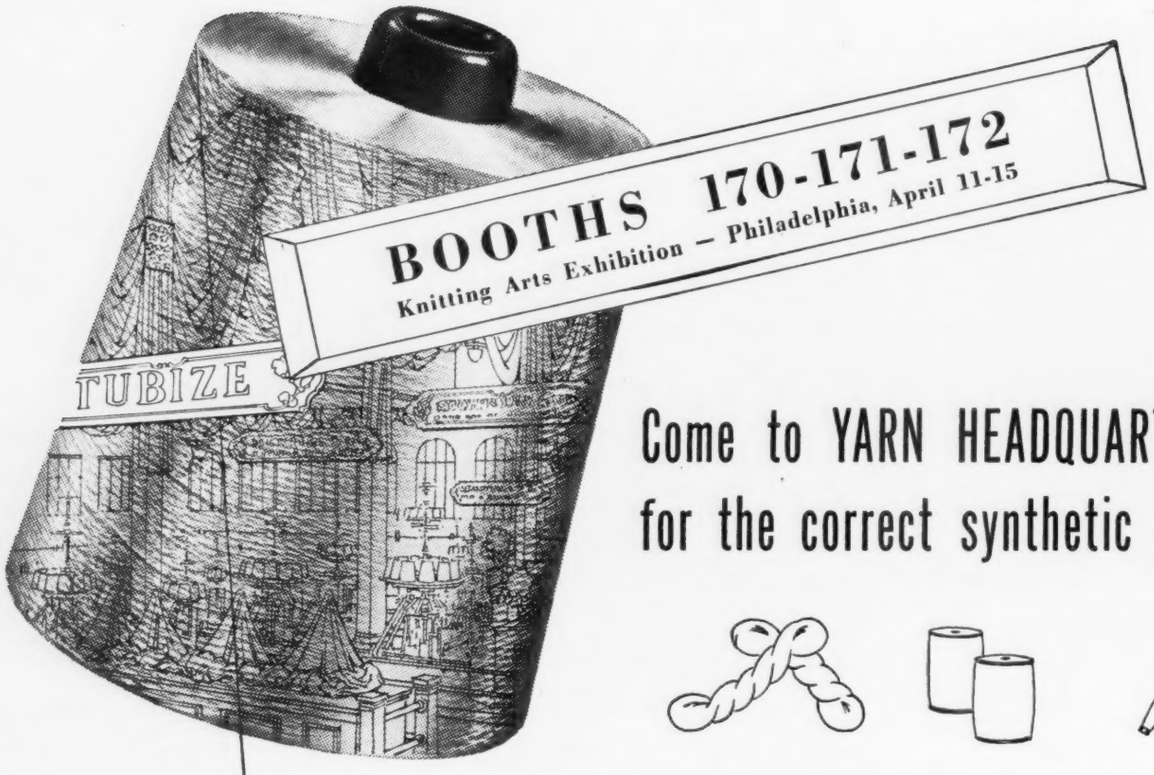
A new low price for 39s came out in March from a manufacturer of a nationally known branded line. It goes to retailers for $4.47½ per dozen and does not carry the mill's trademarked brand. It was

## Comments on the Mesh Situation.

A DECLINE in deliveries of mesh hose in March was attributed to cold weather, women being reported as finding even the fine mesh giving no warmth, while they were comfortable in chiffons. Some interests profess to be very uncertain whether meshes will retain their popularity through the spring and summer season. They are being offered in a wider range of construction, much of the increase being in the cut-and-sewn, or fabricated. Free offerings of this type have served to force material reductions in full-fashioned, and it is stated officially that one mill line which in November last was quoted $14.50 a dozen now is being offered for $7.25, thus putting full-fashioned nets in the dollar class by a safe margin.

Several rather large sales of net for mesh stockings were made in March by a manufacturer of lace, one transaction involving 2000 yards. About the same time a lot of 2000 dozen pairs of Bemberg fancy hems were offered, for 50 cents a dozen, to manufacturers of fabricated mesh stockings. There was an offering also of complete sets of hems and feet for $1.25 a dozen pairs, leaving the buyer to provide window curtain netting for the legs and have the assembled parts made into finished stockings.

A Philadelphia concern is advocating the use of 39-gauge machines for knitting mesh stockings, taking the stand that a heavier thread can be used than on finer gauge equipment and that the optical effect will be the same. This concern is pushing the coarser mesh, taking the position that, at a distance of ten or twelve feet, a fine net cannot be distinguished from a plain knit stocking, from which it is reasoned, "If a full-fashioned and a plain stocking look alike, except on close inspection, why buy a full-fashioned when a plain can be bought for 79 cents and perhaps give longer service?"

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## Popularity of Designed Stocking Surpasses Earlier Predictions . . . . . .

Three months ago the lace hosiery vogue was just a murmur, and a great many manufacturers were skeptical about its possibilities. Today it is a definite part of the hosiery industry, and the makers who were fortunate (or foresighted) enough to get into lace production early, are reaping some benefits in the way of sold-up production for some time ahead, says a market observer.

There is a trend toward the smaller, more delicate patterns in all cases. Large designs were promoted at first for sports wear, but these have been found less saleable than the smaller pattern type, which is more generally wearable and gives the appearance of special sheerness.

There is a feeling of permanence in this vogue. Some retailers say the all-over lace stocking is good for two years or more. Novelty of design is the big item, the selling point; and with lace attachments, both full-fashioned and circular machines seem to have endless potentialities in the way of new and interesting patterns.

In the photograph at the left is Miss Beryl Wallace, of the Earl Carroll Vanities, wearing an effective clover leaf design. (Lace hose, courtesy of Hanes Associated Mills.) At the right is Miss Helen Lehigh, of Paramount films, wearing a popular type. (Lace hose, courtesy Chas. Chipman's Sons Co., Inc.)

brought out, the mill management say, to make existence harder for a manufacturer whose bread and butter number is a 39-gauge and was offered at $4.57½ some few weeks ago. Like the five-toed stocking, the 39-gauge for $4.47½ a dozen, was sold at the customer's risk.

## Southern Mill Draws Line for Return of Lace and Mesh Pattern Hosiery

Since the appearance some weeks ago of two-thread sandal foot stockings for evening wear, intended to permit painted toenails to be perceptible through the fabric, there has been considerable trade discussion as to a line of demarcation for returnable and non-returnable stockings. Buyers for the trade took the stand that hosiery so sheer that manufacturers would accept no returns except for mechanical defects, should not be sold subject to stores' acceptance of returns. It was admitted, however, that regardless of restrictions, women who do not want to keep a pair of stockings will find a way to convince the store of justification for asking to be relieved of them at the store's expense—just another feminine characteristic.

The Archer Hosiery Mills, Columbus, Ga., recently disposed of the problem in its own way, by attaching a sticker to samples and on the order confirmation which reads:

> "Due to possible style and pattern changes on all novelty hosiery, lace and mesh stockings are not returnable except for manufacturing defects before worn."

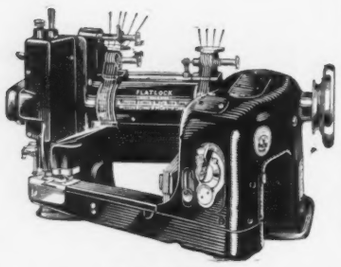
Lace stockings and meshes showing the limit of refinement in construction are not coming into the markets as soon as had been contemplated, nor will they be immediately available to distributors in large quantity. It is explained in full-fashioned machine circles that more time is consumed in attaching the tackle, by which Jacquard patterns may be produced, than had been deemed necessary. One reason for delay is said also to be due to an insufficient number of expert mechanics to properly attach the new parts. Few of the higher price types were being shown in the stores in March, notwithstanding it had been expected they would be an Easter innovation.

The delay in putting lace stockings on the market in a general way seems to be linked up with the operations of the patent pool whose plan was exploited in a crude way, in the trade press in January. And, doubtless, expectation that the much heralded non-run stocking would be on the market in ample time for the Easter parade caused many buyers for the retail trade to hold their orders down to a safe minimum. It was quite apparent that retailers and wholesale distributors were not going to permit themselves to be stampeded into buying by propaganda for a boycott on Japan silk.

## Philadelphia Hosiery Dyers in Group Organization to Correct a Growing Evil in Hosiery Trading

Marshall V. Moss, president of NoMend Hosiery Mills, Philadelphia, where the finishing is done, the manufacturing plant being in Lebanon, stands out almost alone among hosierymen as having laid an indictment against active proponents for a boycott. The position of silk, aside from the historic low prices for raw, has been playing no part in the marketing of silk stockings. A large part of the consuming public was, in effect, maintaining a moratorium on buying, except for actual requirements, and manufacturers who resorted to alleged questionable practices for reducing cost to the danger point failed to lift it.

Some of the hosiery producers in Philadelphia who do not maintain dyeing plants were accused by



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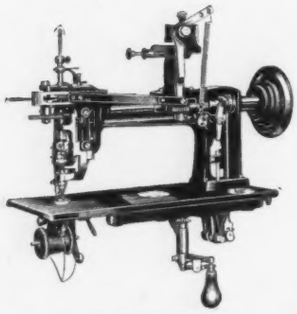

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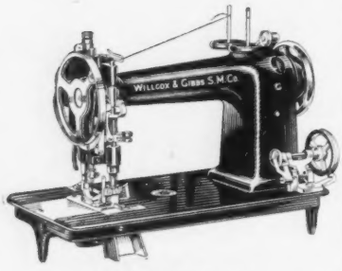

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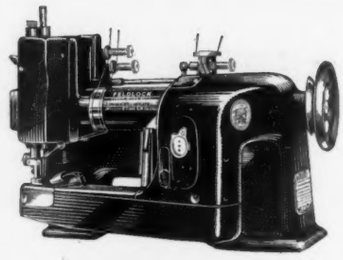

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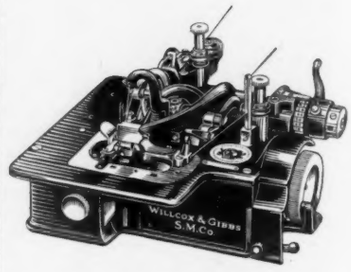

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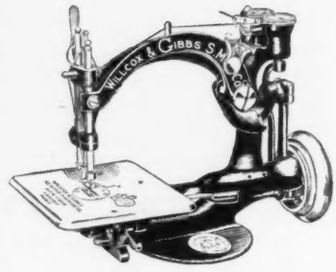
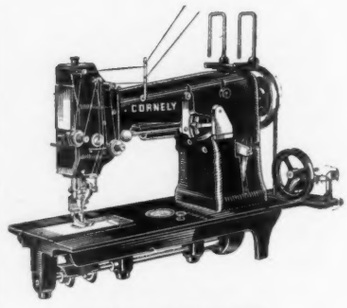


CHAINSTITCH



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the executive director of an organization of which manufacturers are members, of having practiced upon commission dyers the same tactics which hosiery buyers for the retail trade have followed in their negotiations with mills. That is, hosiery manufacturers played one dyer against another and, it is charged, misrepresented quotations.

Dyers had been receiving 25 cents a pound for certain work. One who yielded to the blandishments or deception of a manufacturer cut the price to 23 cents. The manufacturer is said to have told a rival dyer that he had been quoted 20 cents. The second cut the price to 23 cents and lost the business. The two dyers conferred on the report of the hosier, who was taken to task by No. 1 for misrepresenting a quotation. The hosiery manufacturer sidled out of the mess by stating he understood Dyer No. 1 to say 23 but, as his hearing was defective, he might have not heard correctly. And straightway dyers held a meeting at which a group organization of the Philadelphia Textile Manufacturers' Association was effected, with C. Marlin Bell, executive manager of this organization, to be clothed with the power of impartial arbitrator.

Thus has one step been taken by Philadelphia trade interests to purify the atmosphere in the hosiery primary market. Another angle is efforts to bring about a better condition by the proposed elimination of coarse gauge full-fashioned stockings produced on antiquated machines in which investment is virtually nil, is believed to be seen in offers to buy up ancient equipment for the scrap heap.

### Would Scrap Old Coarse Gauge Machines.

Advertisements of 39-gauge machines offered for sale have for some weeks been awakening a prompt response from a person in Reading who cannot be suspected of an intention to set up a manufacturing plant. He has stated to sellers that he simply wants to take the equipment out of commission and can pay only low prices, as the scrap pile is to be the destination of the machines. He states, however, he has bought practically none, that owners place a too high value upon them.

One report is that a corporation operating a small plant of 42- to 45-gauge machines desires to install a few 39s to be equipped with lace tackle. In any event, there has been indicated a movement for reducing to wreckage old equipment devoted to the manufacture of price stockings. Manufacturers commenting on the proposal say they would be willing to make a reasonable contribution to a fund for such purpose, and they express doubt that any owner of archaic 39-gauge would entertain a proposal for equipping such machines with costly lace tackle or other modern devices which thus far are in control of machine builders. It is pointed out that machine interests are believed to be taking advance ground in behalf of the full-fashioned industry and their own industry, as well.

A scare was precipitated in hosiery circles over announcement of a 20-cent price being added to the five-and-ten range of the Woolworth stores, and


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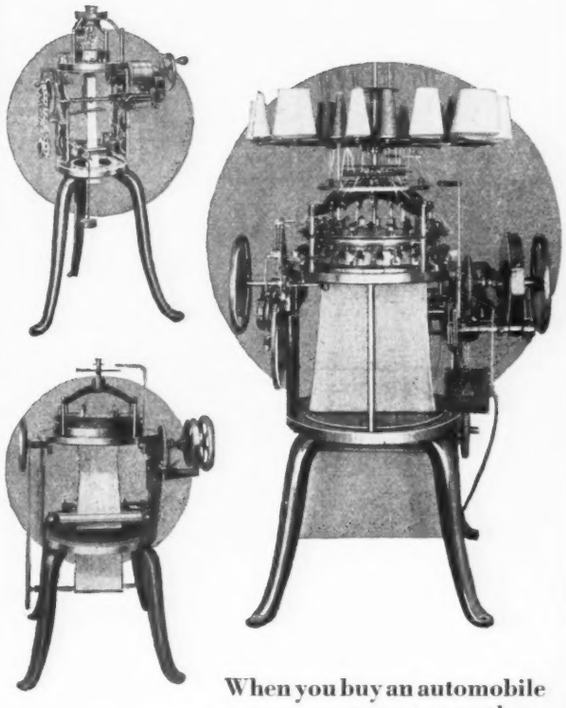

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some interests profess to see in an indicated effort to rid the full-fashioned industry of cheap-producing coarse gauge and obsolete machines, which might be found turning off silk full-fashioned for the 20 cents a leg price in Woolworth stores, a means for a narrowing of output of Woolworth flat-knit stockings. It is held to be easily possible for Woolworth's to carry as a leader a line of full-fashioned stockings selling for 40 cents a pair, since at least one mill has a price of $4.47½ a dozen to retailers. There is, theerfore, method in a movement, as reported, to take out of production all 39-gauge machines possible. For, as pointed out, if chain stores shall enter the full-fashioned field with 40-cent stockings, they might be expected to cut deeply into the sales of single unit stores, as they already have in men's half-hose and children's lines, at 10 to 20 cents a pair. But the menace of a chain store 40-cent price is the greater in its possible effect on the program for trading up in department stores through lace and mesh numbers and the proposed non-run type of stocking exploited, sentimentally, at least, through talk of a patent pool.

## Woolworth Inclusion of a 20-Cent Price Causes Stir in Full-Fashioned Hose Group

Leaving out of consideration women's full-fashioned, it is held by hosiery jobbers that if independent retailers do not offer lines of hosiery competitive of the types carried in chain stores, they will have only themselves to blame if the chains acquire still more of the retail business.

Jobbers offer an attractive line of novelty half-hose for 85 cents a dozen which, it is held, would provide a reasonable margin of profit for retailers sell them for 10 cents a pair, which is the price of practically identical socks in Woolworth stores. Other numbers are priced 80 cents a dozen in quantities of six dozens. So, it is maintained, Woolworth new prices should cause no serious shaking up among single unit retailers except in perhaps full-fashioned coarse gauge, largely of rayon. Jobbers predict retailers will commence buying more freely after the full effect of the 20-cent price in Woolworth stores has been indicated. But the departure from the former range is likely to leave a deep impress on the business of hosiery and underwear jobbers specializing in such lines in the medium grades.

The addition of men's furnishings by some of the women's ready-to-wear shops in which men seldom have been seen as customers is another instance of a broadening of outlets by reason of which small retail shops are facing a new competition from other than chain stores. In the case of George B. Allen, Inc., in the heart of Philadelphia's more exclusive shopping district, more than 75 per cent of the purchases of hosiery, underwear and other small wares for men are made by women, it was stated by an executive. The company took its cue from its branch store in an outlying district of the city which opened two years ago with a stock of furnishings for men and women. Women who are patrons of stores on the order of Allen's buy the better grades of goods, according to the executive.


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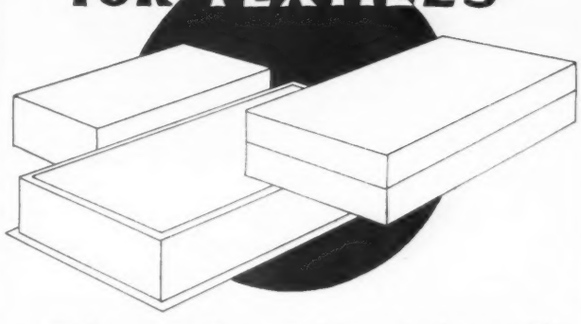

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## Manufacturers' Hosiery Reports for January Show Speeding Up Felt in March Curtailment

Too much speeding up in hosiery production in January had its reflex in March, in a considerable slowing down. The reports of 350 identical manufacturers to the Department of Commerce showed little change in the statistical general position of hosiery in January this year from January 1931, but did reveal that, while output, all classes, was increased by nearly seven per cent, stocks at the end of the month showed an increase of almost nine per cent while unfilled orders were less by approximately 22 per cent. Shipments were about 40,000 dozens less, to 3,905,993 dozens for January this year. Women's full-fashioned gained nearly 40,000 dozens in net shipments, and stocks were reduced by the end of the month by almost 12 per cent. Women's seamless, while declining in production, improved their position in a slight gain in unfilled orders and a substantial decrease in stocks in manufacturers' hands.

Men's half-hose, in which there has been an excess of offerings for some time, as indicated in disparity of price, came off over six per cent in greater quantity January this year as compared with 1931 same month, but shipments fell off slightly and unfilled orders declined by around 22 per cent. Stocks declined by approximately the same per cent that production was increased.

Outstanding in the statistics is a showing of an increase of almost 100 per cent in production of women's rayon full-fashioned stockings from January last year to the corresponding month of 1932, while the increase in rayon seamless was less than 2,000 dozens, for a total of 127,830 dozens in January this year. But in the boys' misses' and children's group the use of rayon showed a gain of around 37 per cent.

A continued tendency to manufacturers' assumption that the preference is given lower priced half-hose is indicated in a substantial increase of rayon-cotton construction for seamless, while in women's seamless there was a decline of nearly 42 per cent in rayon-cotton output.

The March cold snap was about eight weeks too late to be helpful to the underwear market situation. While it prevailed, and even after more seasonal temperatures came to be registered, it was too late for any business in heavy weights and too early, so far as suggested by thermometer readings, to persuade buyers to take on light weights.

While the open winter is said in the trade to have lost permanently a considerable amount of business in heavies, it is the opinion that shrunken purchasing power was responsible for severe curtailment of buying of either heavies or shorts and shirts, the one item that is expected to go over in a big way once the swing of seasons has proceeded toward summer.

Men's heavy and medium weight union suits seem to be harder hit than any other item in underwear. Dollar union suits seemed to monopolize attention in the heavy weight group. Very few of the one-time $2 suits and exclusive types in the high price bracket have passed to retailers, according to some of the leading manufacturers. The dollar unit of sales dropped to a new low level and necessarily profits underwent a severe paring.

Notwithstanding the popularity of shorts and shirts, men's light weight union suits seem to have sustained no serious drop. In fact, one leading wholesale distributor of a well known branded line reports sales of more popular price combination suits last year than in either of the two years previous, when shorts and shirts were at their zenith in volume of shipments. It is not established that other large distributing centers had the same experience, the opinion prevailing that union suits, both heavies and light weights, have, as a general proposition, declined in sales, due in part to the sports craze and the fact that shorts are on sale in chain stores for 10 cents a pair, making the cost of a two-piece suit around 50 cents to persons buying the chain store garment and paying some department store low prices for athletic shirts.

Dollar mesh underwear, in both men's and women's numbers, is being intensively exploited in some of the better large stores, and particularly is there developing increasing interest in tuck-stitch garments. Women's shirts, pants and union suits of this construction, with the waist section knitted in swiss rib, are especially active and are rated among the better underwear items for summer. At the low price for silk, there seems a much narrowed outlet for women's cottons of this construction, nor are rayons moving out fast, according to retailer reports. There continues some experimenting with women's swiss knit spun rayon, which is said to look as though it will be accorded a good reception.

Shorts and shirts are reported by some distributors to the retail trade to have been sold in fully as great volume as last year during the first quarter. In a general way, however, distribution of light weights for men has not proceeded at a rate commensurate with the outlook for demand.

Men's heavy weights, which opened later than was scheduled for the formality, have been so well cleaned up, according to reports common in the primary markets, that, with a normal fall, there should be a renewal of interest, it is believed by some leading buyers, who say that with climatic conditions practically normal and outdoor employment more plentiful, there will be the usual demand for the heavier garments in cotton and a return of at least modest demand for woolens.

## Underwear Primary Markets Disarranged; Low Temperatures Prevailing Inopportunely

Dealers who have bought a fair part of their bathing suit requirements for the coming season may be the only ones to be fully prepared for an early start at the beach resorts, for it is apparent few mills are making up goods in excess of orders. As late as the middle of March there were distributors who had not supplied detailed orders, although shipments will be moving out generally this month and in the first half of May.

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This is identical to Arctic Olive Oil Soap, except that it contains a small percentage of coconut oil, the coconut oil being added to produce additional sudsing qualities . . . Also

**Arctic Crystal Flakes and Granulated**

Pure tallow soap, 42°c. titre.

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Gentlemen: Please send me copy of your free bulletin which gives complete details of degumming and dyeing in a single bath with your soaps.

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(Please print name)

*Company*.....

*Address*.....

*City*.....*State*.....

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## SPUN RAYON

**Strength, dull lustre, appealing appearance are features that have brought the great wave of popularity in favor of the new and outstanding Quitex Spun Rayon.**

**For easier and larger sales—for more "I'll take this new weave", apply Quitex Spun Rayon to as many of your textiles as possible.**

**Let us send you samples of Quitex Spun Rayon.**

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**New Bedford, Mass.**

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QUISSETT MEANS QUALITY

# SILK HOSIERY FINISHES
*BROSCO* DULL FINISH-FINISHING COMPOUND S. P.
*BROSCO* SCROOP OIL

**Can be used alone or in conjunction with one another to produce any desired feel and finish.**
**Does not shrink or tighten up the fabrics.**

SCHOLLER BROTHERS, INC.
Amber & Westmoreland Streets
Philadelphia, Penna. Since 1907

SCHOLLER BROTHERS, LTD.
In Canada St. Catharines, Ontario Since 1927

## For softer rayon

A small quantity of Oakite added to the scouring formula helps turn out rayons that are soft and supple to the touch . . . assures even dye penetration.

The Oakite Service Man in your vicinity will gladly work with you on wet-finishing problems. Write and he will call.

*Manufactured only by*
OAKITE PRODUCTS, INC.,
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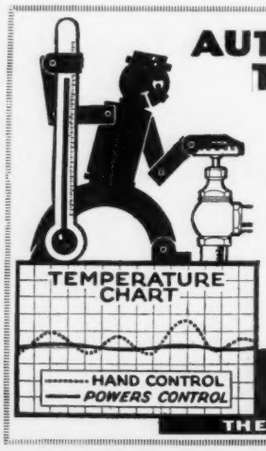
**OAKITE**
*Industrial Cleaning Materials and Methods*




## AUTOMATIC TEMPERATURE CONTROL

**FOR—Weave Rooms, Spinning and Carding Rooms; also temperature regulators for Dyeing, Drying, Slashing, Wool Scouring, etc.** *Write for Bulletins.*

2739 Greenview Ave., CHICAGO
231 E. 46th St., NEW YORK
*Also 41 other cities*

THE POWERS REGULATOR CO.

Some of the manufacturers in need of business for their plants became tired of waiting for jobbers' bathing suit orders and in March came on the market with women's knitted suits in two and three pieces, for popular prices. They will have no stocks of bathing suits for distributors to play with in the event of a late season, or for filling rush orders should retailer demand for deliveries develop early.

The holdback attitude of so many jobbers has had a serious reflex in markets for worsted yarns, with spinners, mostly operating on much reduced schedules. A jobber distributing nationally reports orders for the suits abreast of the volume for the first three months of last year. The orders are from scattered cities, and, it is stated, some of the southern retailers, aside from those in Florida, have been among the freer buyers. Popular retail prices will be in the range $1.49 to $2.98. There is prospect of considerable retail business in suits costing jobbers around $8.50 a dozen.

According to statements by a few manufacturers, worsted zephyr yarns are falling into disuse for bathing suits. While some deny this to be the case, it is a fact that the buyers for several of the larger retail stores in New York lodged complaint last year against zephyr construction, alleging the fabric was inclined, under certain circumstances, to mat or take on a characteristic of felt. Whether this complaint is well founded, it is a fact that single yarns in count 18 have been one of the more popular numbers among scattered mills this season, the yarn costing mills 90 cents a pound dyed, with some sellers accepting orders on an 87½ cents basis.

Sweater production is reported much in arrears of even a dull season's needs. Women's worsted mesh slip-ons, weighing about four ounces per garment, have been bought in fair volume by retailers, and last month demand for boys' sweaters became more active, especially in lines to sell for around $1.50 apiece. In a general way, demand for sweaters for men appears to be much lighter than in the first quarter of 1931, and some of the mills are said to be shaping their production campaign for a decline in volume of sales. Thus far the 1931-32 season in knitted outerwear has been probably the poorest the industry has had for some years.

## Among the Knitting Mills

The Glen Raven Hosiery Mills, Burlington, N. C., are operating 50 machines under the direction of W. C. Elder, general manager, who for some time has been connected with the Standard Hosiery Mills.

The new addition to Utica Knitting Co., Mill No. 9, Anniston, Ala., is being constructed under the supervision of Duke-Stickney Construction Company.

Doby Buchanan and John Frey have purchased a small knitting mill, which they will operate near Burnsville, N. C.

Standard Hosiery Mills, Burlington, N. C., have recently installed Veeder type course counters on their full-fashioned machines, purchased through W. A. Kennedy Co., Charlotte, N. C.

Dr. O. J. Corpening has organized a company at Granite Falls, N. C., for the manufacture of men's hosiery; 50 hosiery machines will constitute the initial equipment.

A report states that the Meinig Hosiery Mills, Corinth, Miss., is planning an immediate expansion of the plant.


BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

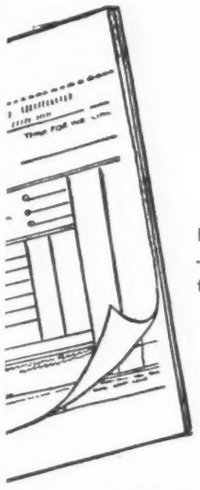
Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

JOSEPH T. PEARSON & SON CO.
*Manufacturers*
Kensington and E. Boston Avenues
PHILADELPHIA, PENNA.

4 in 1 -- 4 in 1 -- 4 in 1 -- 4 in 1 -- 4 in 1

FINISH 4 JOBS at One Time
WITH OUR
FOUR-IN-ONE
PATENTED
Pay Envelope



It speeds work in the payroll department —cuts down complaints. It accomplishes these four tasks at once:

1 Carries the pay,
2 Supplies employee's wage receipt,
3 Gives time and wage statement both to employee and to you.
4 Provides deduction statement both to employee and to you.

Send for a sample, and examine this miracle-envelope.

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4 in 1 -- 4 in 1 -- 4 in 1 -- 4 in 1 -- 4 in 1

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*Manufacturing Chemists*
*Established Jan. 1, 1895*
**Works and Office, Atlantic, Mass.**

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*Sulphonated-Saponified*

Soluble Oil — Para Soap Oil
Turkey Red Oil — Castor Soap Oil
Soluble Pine Oil — B & L Bleaching Oil

PENTRALYN, a superior assistant for Beam, Spool, Bobbin and Package Dyeing.

Bleach Softener CSO, Finishing Sizings and Softeners.

VICTROLYN, the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.

B & L Bleachers' Bluings and Violet Tints

***GOOD MONEY VALUES-FREEDOM FROM WORRY***

# VICTOR MILL STARCH

## The Weaver's Friend

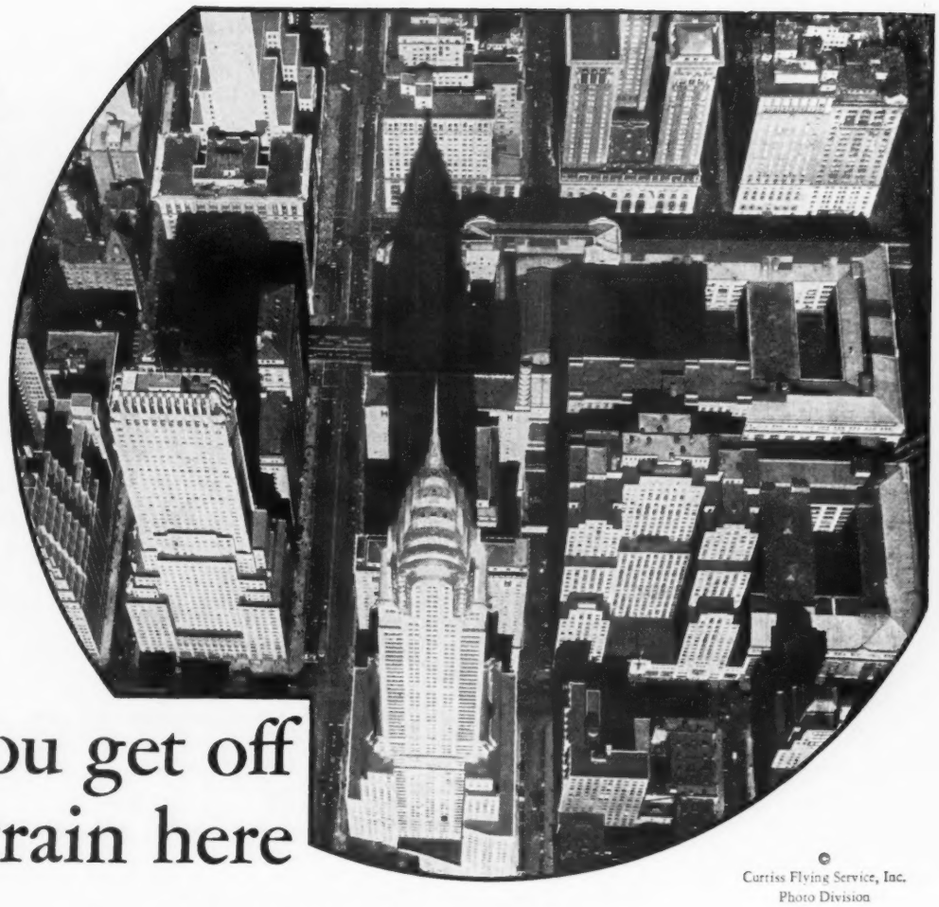
It boils thin—it penetrates the warp—increases breaking strength and carries the weight into the cloth. Being thoroughly washed free of gluten and other foreign matter it gives a bleach and finish to the goods that you can get from no other starch.

A trial order will convince you that VICTOR STARCH has no equal on the market.

## THE KEEVER STARCH COMPANY, Columbus, Ohio

**Southern Agent: MR. DANIEL H. WALLACE, Greenville, S. C.**

**If you are not already using VICTOR STARCH call on our representative for a demonstration at your convenience.**



*Unusual air view of the vicinity of The* SHELTON, *the Grand Central District, showing Chrysler Bldg. in the foreground. Opposite the new Waldorf-Astoria.*

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Most popular among comfort-loving travelers. Where guests may enjoy an invigorating plunge in the beautiful Shelton Swimming Pool, at any hour and without charge. Where you find all the service that can be given by a metropolitan hotel of the first class—and an unusual club-like atmosphere that has endeared *The* SHELTON to travelers from every section of the world. You will like *The* SHELTON—it is different—and such a relief from the ordinary hotel.

*Besides the swimming pool there is a gymnasium, completely equipped; game rooms for bridge, chess, billiards, bowling; roof garden; solarium; library and reading room; four beautiful lounges; yet room charges are no higher than in other hotels where the most you can expect is a "room and bath."*

$2.50 to $3.50 for one
$4.00 and $4.50 for two
Suites, $5.50 and up.

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"AGLOW WITH FRIENDLINESS"

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DETROIT

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# PHILADELPHIA

600 ROOMS AND BATHS

*A Room and a Bath For Two and a Half*

$2.50 *Single with Bath*

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WE HAVE THEM AT

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# EAGLE STARCH

*has achieved*

1—GREATER UNIFORMITY of moisture content and fluidity of paste. While Eagle Starch always has been approved for its uniform quality, the new Eagle Starch is controlled within still narrower limits. Every package is absolutely uniform in moisture and fluidity.

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**CORN PRODUCTS REFINING CO.**
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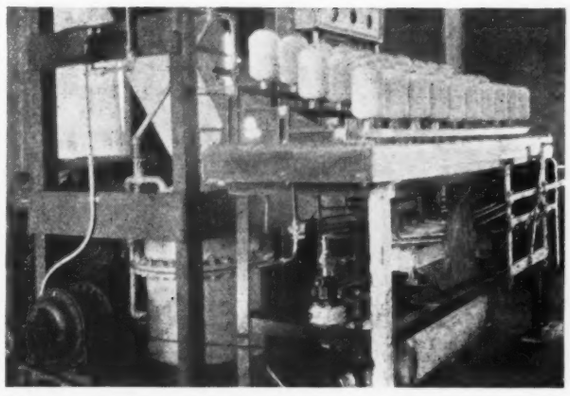

*This is Hygrolit Yarn Conditioning Machine BD for conditioning cones.*

# CONTROLLED YARN CONDITIONING

Knitters appreciate Hygroliting of yarn.

They know how good it runs.

Why not have your cones Hygrolited?

Please send some of your yarn which we will Hygrolit for you without charge.

It will please you.

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to LIGHT
often includes
an excellent
FASTNESS
to WASHING
..... if you use
Chlorantine
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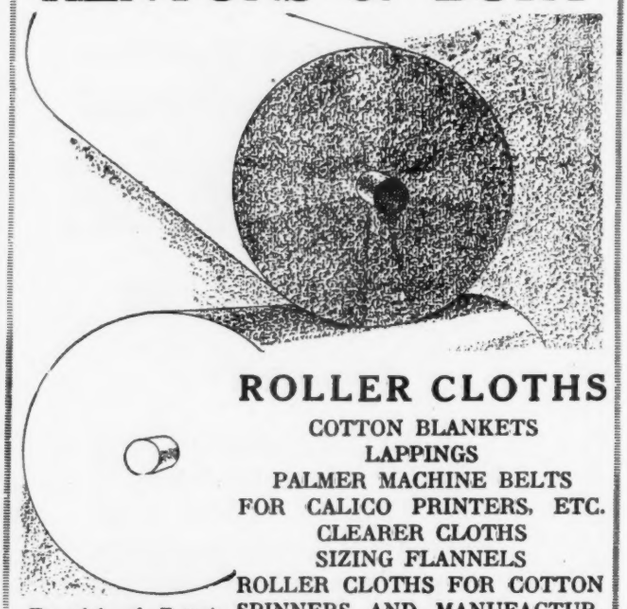

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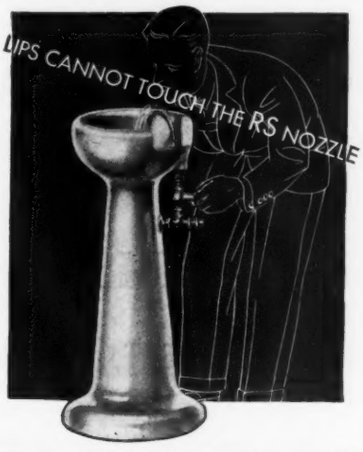


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Mechanical Excellence

to match the exclusive Centrif-Air features

This company approached the problem of building a cotton cleaning system with a dual purpose . . . First to build it with unusual cleaning efficiency. And—equally important—to match that high efficiency with *mechanical* excellence. As a result of this policy Centrif-Air Adjustable Cotton Cleaning System has established an outstanding record of dependability and long time service.

50% more efficient. Three distinct separations—using mechanical force, centrifugal force and gravity. Write for information.

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ADJUSTABLE COTTON CLEANING SYSTEM
THE CENTRIF-AIR

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**For Waste—**
Hand operated Balers—
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*Model 26-MS. Power Baler specially designed for export yarn baling.*

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Warp Bobbin equipped with metal bushing.

**Keeping Bobbins Same Height on Spindles**

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*Metal Stampings* — The Shield of Protection — *Screw Machine Products*

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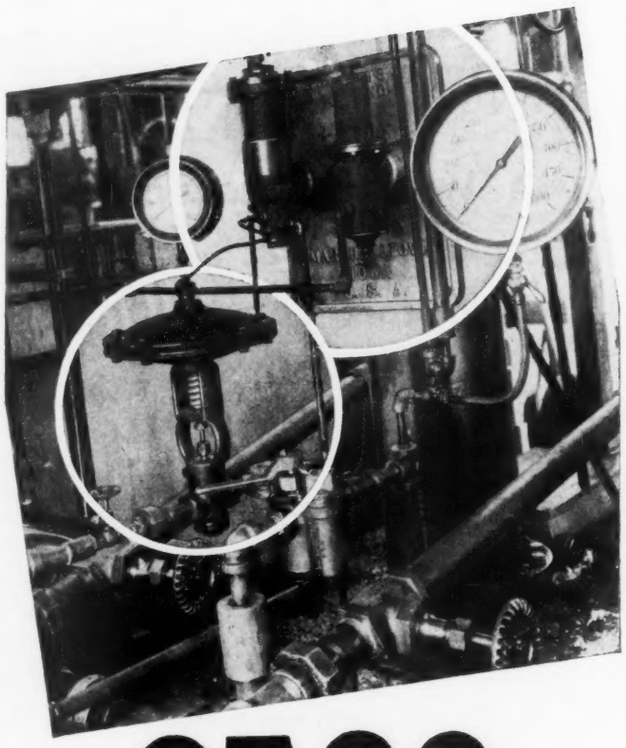

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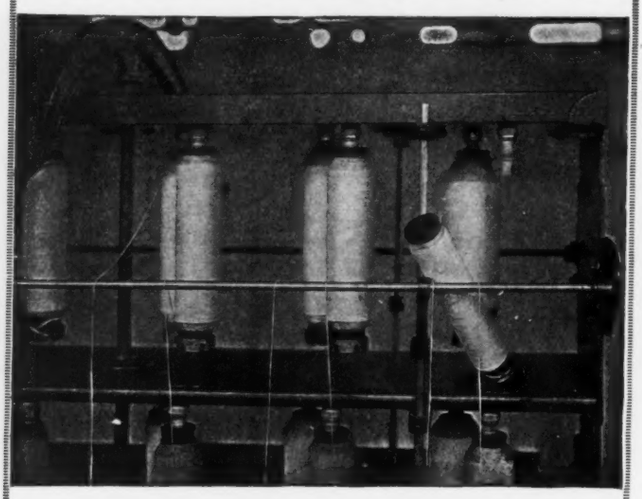

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with

# Long Draft System

**The Eclipse Ball Bearing Bobbin Holder used in connection with Long Draft system of Spinning has some very distinct and desirable advantages over wooden skewers.**

**Due to the Eclipse Ball Bearing Bobbin Holder's construction, the largest possible package of roving with a minimum of twist can be used without *stretching* the roving.**

## —WHY—

**A package (large) of roving will be rotating on Ball Bearings, hence greatly reduced friction when being pulled from bobbin; also due to the construction of the Eclipse Ball Bearing Bobbin Holder, a package (large) of roving will automatically rotate without WABBLING—consequently, this means greatly reduced *stretching* of the roving.**

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**Elmira, N. Y.**

# ECLIPSE
## BOBBIN HOLDER

# "KNITTING KINKS"

## *A Valuable Handbook on the Operation and Adjustment of Knitting Machines*

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Fitting a Main Pawl.
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Fitting a Down-Pick.
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Fastening the Dial.
Pile-Ups.
Puckered Streaks.
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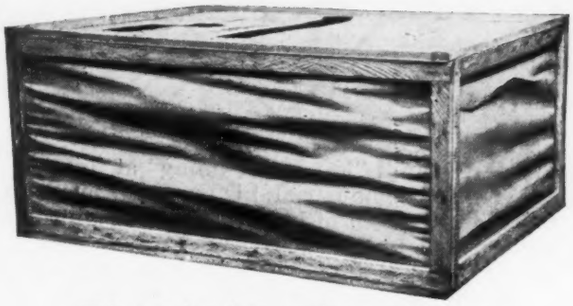
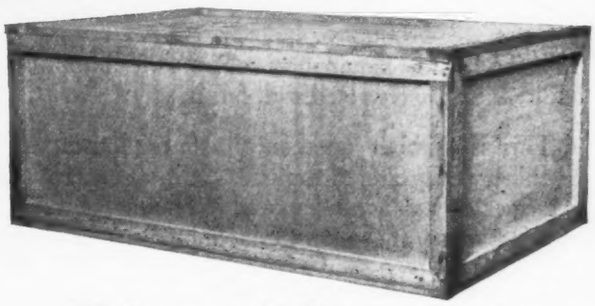
# DOES **MOISTURE** AFFECT YOUR **PLYWOOD BOXES** LIKE

THIS OR THIS?



This box has been under a water spray
**48 MINUTES**
It is glued with **VEGETABLE**
(non-water-resisting) glue



This box was under the *same* water spray
***48 HOURS!!!***
It is glued with **LAUXEIN**
(water-resisting) glue

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**SPECIFY LAUXEIN GLUE ON YOUR NEXT PLYWOOD BOX ORDER**

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**Affiliated with L. Mundet & Son—Established 1865**

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Without obligating us in any way, please send a copy of the catalog.
We are interested in Roof Insulation for roof as follows:
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Firm.....
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LIQUIDATING AGENT

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**Clifford 961**

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Interested in securing a second-hand Hygrolit Conditioning Machine for the setting of twist in yarn.

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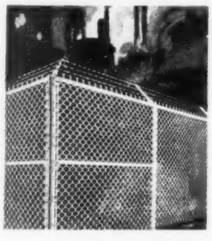

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**Company officials state that a saving of 33⅓% in fuel alone resulted from this Morehead installation.**

**Regardless of the size of your plant—regardless of what you use steam for—heating, cooking, drying, and all kinds of process work—it will pay you to find out what the application of Morehead methods will do for you.**

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Alligator Steel Belt Lacing holds the belt in a vise-like compression grip. Prevents ply separation at belt ends. The smooth flexible joint is reliable in service and has great surplus strength. It rocks on oval faces of the sectional hinge pin.

*Quickly and Easily Applied with only a Hammer*

Combines the efficiency of an endless belt and the convenient take-apart feature. In general use on light, medium and heavy belts of all types. Made also in "monel metal". Eleven sizes. Sold the world over.

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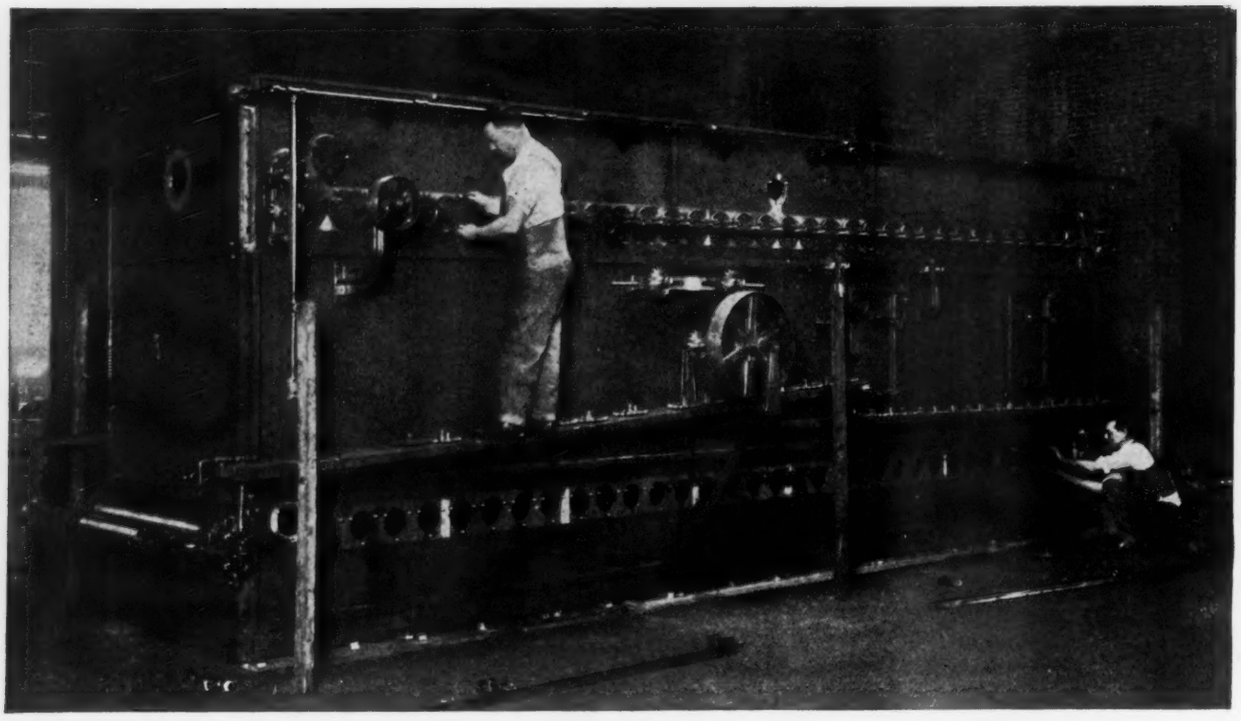
# THE 200th AGER
## BUILT by *Textile*



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This machine embodies such mechanical features as outboard self-aligning ball bearings, for both the top and bottom carrier rolls. An individual motor drive with a variable speed control built as a compact unit, and mounted on side of machine. All jointed surfaces are accurately machined and fitted to precision.

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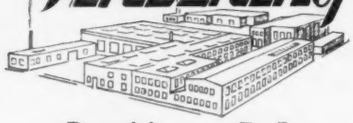
*The Textile Finishing Machinery Co.*



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Southern Agent
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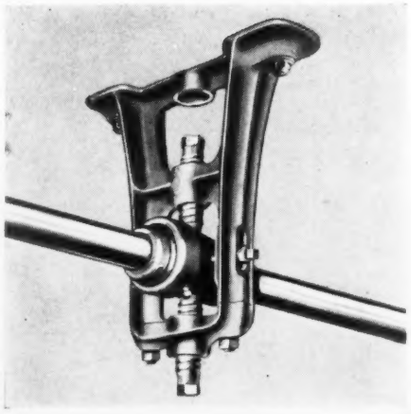
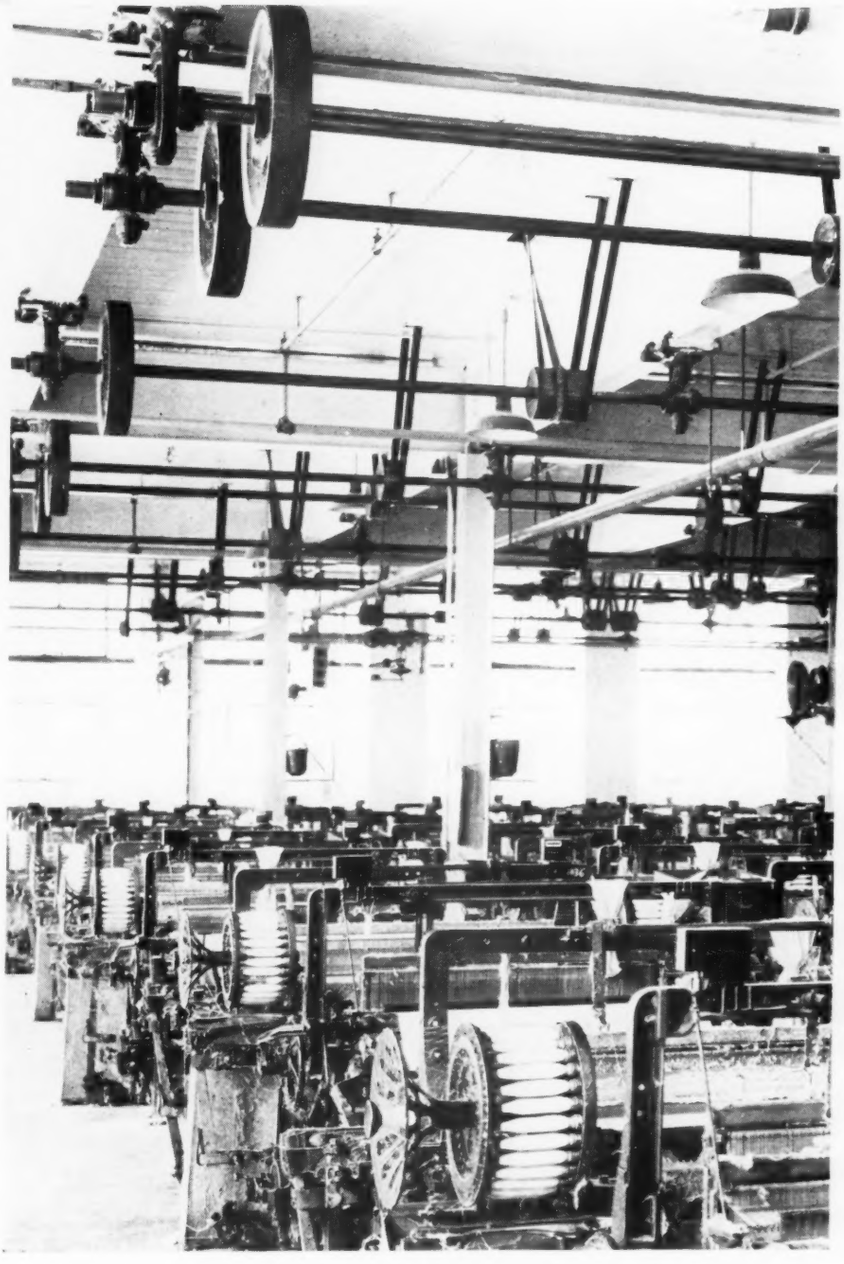
**Manufacturers of Machinery for**

**Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Textile Fabrics and Warp Yarns**



# 648 Ball Bearings *lead to* $3,000 Power Savings



ROUTINE inspection every 3 months! There has been no other maintenance expense for the loom drive hangers since the 648 Fafnir Wide Inner Ring Ball Bearings were installed 3 years ago.

That is only part of the savings these Fafnirs have produced in the Gaffney Mfg. Co., Gaffney, S. C. There has been a 10% decrease in the power consumption. A saving of more than $1000.00 yearly results. Significant is the fact that the profits produced will continue undiminished for many years to come.

Gaffney is typical of many mills which have obtained the cleanliness and efficiency of ball bearings with Fafnir Hanger Boxes; which have gained this end most easily through the simplicity of installation these bearings provide.

Helpful information is contained in the Fafnir Textile Catalog—data covering applications on motors, hangers, pillow blocks as well as machines of all kinds. Write for a copy. There is no obligation involved.

THE FAFNIR BEARING CO.
NEW BRITAIN, CONN.

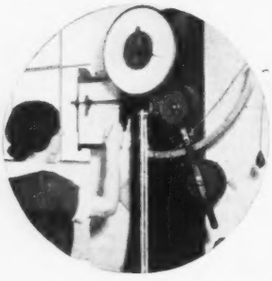
*Representatives also at* Atlanta, Ga.; Charlotte, N. C.; Dallas, Texas; Houston, Texas; Boston, Mass.; Birmingham, Ala.

FAFNIR

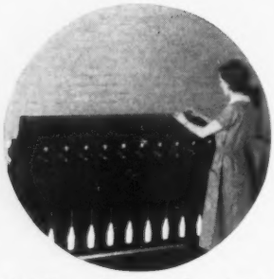
**FAFNIR BALL BEARINGS**

# Laboratory Control

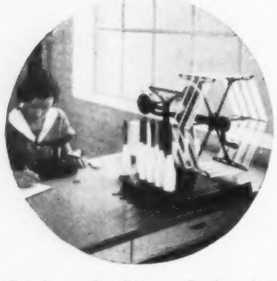
View of new General Control Laboratory showing test ribbing and knitting machines.



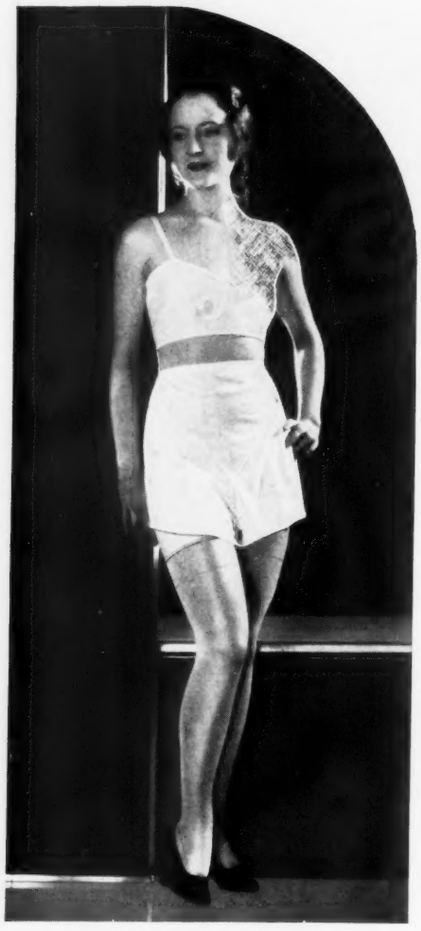
Skein Yarn Break Tester in new laboratory recording elasticity and strength.



Seri-Plane Board. Examining Dixie yarn for evenness, slubs, neps, etc.



Reel and Grain Scale for determining count. All Dixie laboratory records are permanently filed.



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DIXIE builds a new general control laboratory; supplementing the work of the Spinning Department laboratory, the Finishing Department laboratory and the chemical laboratory in the Mercerizing Department. Controlled Manufacture tightens its grip over Dixie quality. Dixie's customers can be certain of the results they will get from Dixie yarn because the yarn is tested for **knitting results** before it is shipped.

The new general control laboratory, housed in a completely new building of its own, constantly tests Dixie yarn for evenness, both in twist and diameter; for knots, slubs, neps; for elasticity; for strength; for count; for moisture regain; and for mill performance, by actually knitting Dixie yarns on our own knitting and ribbing machines.

Now, more than ever before, you should try Dixie yarn in your mill. Let the Dixie representative furnish you samples.

**DIXIE MERCERIZING CO.**

CHATTANOOGA, TENNESSEE

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